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Map of the Eastern United States showing the locations of various Naval Air Stations (NAS) and Naval Air Commanders (NAC). The map includes labels for NAS Brunswick, NAS South Weymouth, NAS North Weymouth, NAS Fanning Island, NAS Norfolk, NAS Langley, NAS Pensacola, NAS Jacksonville, NAS Charleston, NAS Norfolk, NAS Bermuda, and NAS Key West. It also shows the locations of the Naval Air Commanders (NAC) for the Atlantic, Pacific, and Caribbean. The map is a black and white line drawing with latitude and longitude markings.

PREPARED UNDER THE AUTHORITY OF
COMMANDER, NAVAL OCEANOGRAPHY COMMAND
STENNIS SPACE CENTER, MS 39529-5000

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This climatic study consists of monthly charts and tables of: (1) clouds, (2) precipitation, (3) visibility, tables, (4) ceiling, visibility (mid-range/low range), (5) wind, visibility, cloudiness, (6) scalar mean wind speed, (7) wind speed less than 11 and greater or equal to 34 knots, (8) wind speed 11-21 and 22-33 knots, (9) surface wind roses, (10) air and sea temperature, (11) wave height-isopleths, (12) wave height, tables, (13) surface currents (seasonal).		

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DEPARTMENT OF THE NAVY

NAVAL OCEANOGRAPHY COMMAND DETACHMENT
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ERRATA SHEET

From: Officer in Charge, Naval Oceanography Command Detachment
Asheville

Subj: NAVAIR 50-1C-555 - U. S. NAVY REGIONAL CLIMATIC STUDY OF
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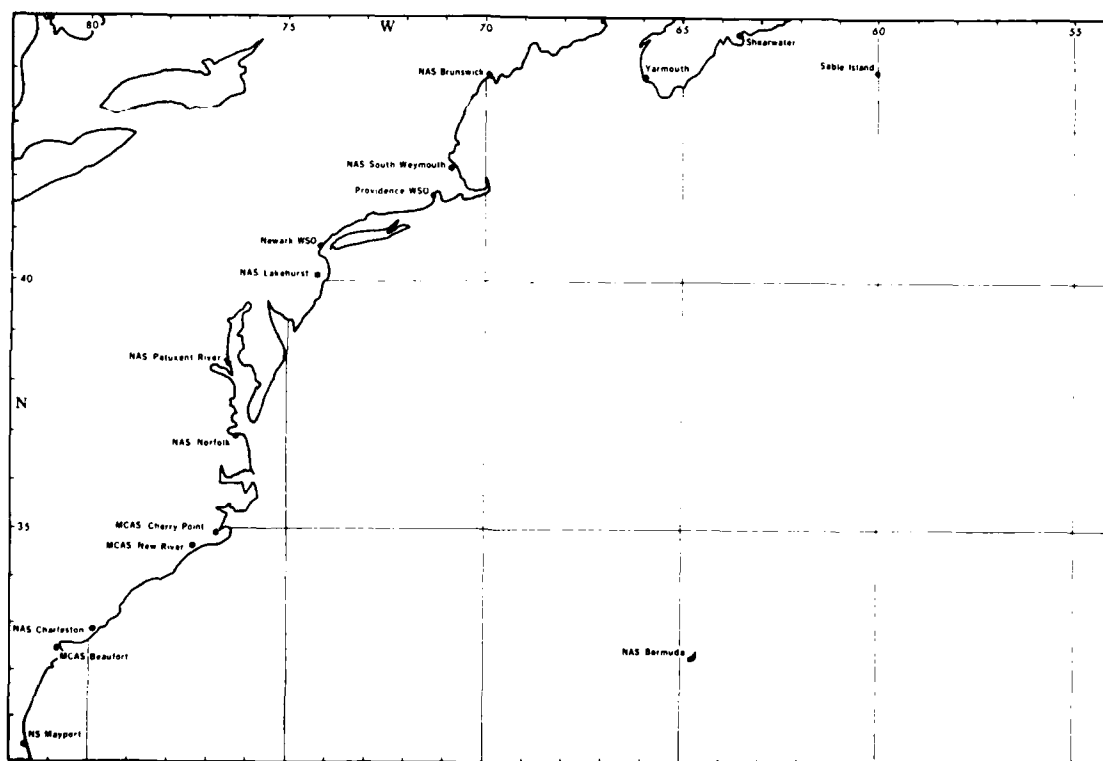
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M. L. DICKENSON

U.S. NAVY REGIONAL CLIMATIC STUDY OF THE UNITED STATES ATLANTIC COAST AND ASSOCIATED WATERS

JANUARY, 1989



**PREPARED BY
NAVAL OCEANOGRAPHY COMMAND DETACHMENT,
ASHEVILLE, N.C.**

**PREPARED UNDER THE AUTHORITY OF
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STENNIS SPACE CENTER, MS 39529-5000**



The U.S. Navy Regional Climatic Study of the United States Atlantic Coast and Associated Waters was prepared for the Commander, Naval Oceanography Command (CNOC) by the Officer in Charge, Naval Oceanography Command Detachment, Asheville, North Carolina. The work was performed in Asheville at the National Oceanic and Atmospheric Administration's (NOAA) National Climatic Data Center (NCDC). The surface marine and land statistics presented in this study were made possible through programs designed at NCDC and funded primarily by CNOC in support of U.S. Navy's continuing marine climatology requirements.

Special acknowledgment is given to the following named meteorologists of NCDC's Climatological Analysis Division (CAD): William A. Brower, Jr., for serving as project leader and climatic analyst; Phala L. Franks, for performing the computer processing and editing of data; M. Lawrence Nicodemus, for development and production of the Station Climatic Summaries; and Michael J. Changery, Joe D. Elms, and Dr. Walter J. Koss, for their editorial evaluation of the text, isopleth analyses, and graphics products. Specific acknowledgment is also made to CAD's Ronald G. Baldwin, computer programmer/analyst, for production of the computer-generated graphic presentations, and Michael G. Burgin and Scott J. Miller, Meteorological Technicians, for their drafting skills in preparation of this publication for printing.

Geographical Coverage

This climatic study covers the U.S. Atlantic coast and associated waters between 30° and 45° latitude from northern Florida to the southern coast of Nova Scotia, and eastward from the U.S. coastline to 54° longitude. Figure 1 shows the marine area and the locations of 16 coastal and island stations for which climatic statistics are presented.

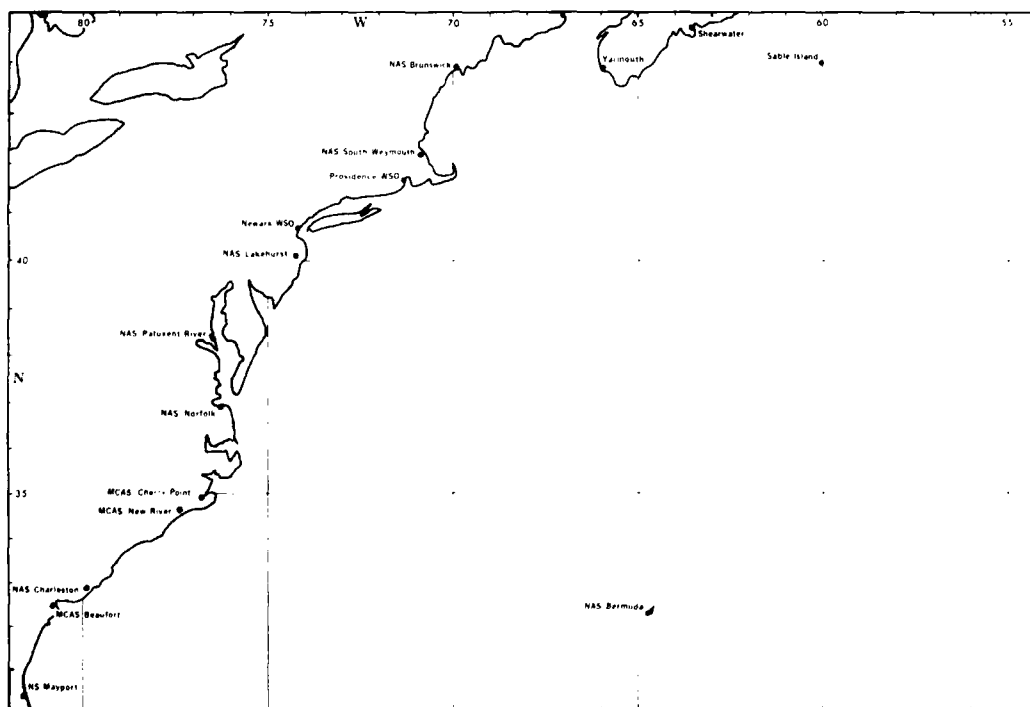


FIG. 1 CLIMATIC STUDY AREA FOR U.S. ATLANTIC COAST AND ASSOCIATED WATERS

Climatic Data and Summaries

Surface marine statistics are given on monthly charts in the form of graphs, tables, and isopleth maps. Statistics include the means, extremes, and percent frequency of occurrence of threshold values for wind, visibility, clouds, precipitation, air and sea surface temperature, and ocean waves, currents, and mixing depth. The marine statistics, for other than currents and mixing depth, are based on 5.0 million hourly observations taken from NCDC's Tape Data Family 1129 (TDF-1129). These observations



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were collected by ships of various registry within the marine area 30-48°N, 50-82°W from as early as 1855 to 1986. Sea-surface current data were provided by NAVOCEANO, Bay St. Louis, MS. Mixing depth data were provided by NOAA's National Oceanographic Data Center.

The TDF-1129 and mixing depth data were computer plotted by one-degree quadrangle and subjectively analyzed by meteorologists in order to produce the isopleth maps. Computer graphs and tables of visibility, wave heights, wind roses, and sea surface currents are also presented by one-degree quadrangle. The graphs and tables represent the objective compilation of available data. These data were not adjusted for suspected biases (low observation count, heavy weighting of observations taken during a short time interval, biases in coding of observations from various source decks, etc.), hence differences may be found when comparing the graphical data with the isopleth analyses. The total number of observations for a given one-degree square should always be considered when interpreting the data because there may not be a sufficient number for the calculation of climatically representative statistics.

Station Climatic Summaries (SCS) are presented in tables for the 16 coastal and island stations. Table 1 lists the station name, location coordinates, and period of record for the hourly and daily data which were processed for each of the 16 stations. The observations processed for the 13 U.S. stations were collected by the U.S. Navy and NOAA's National Weather Service (NWS) and were routinely sent to NCDC for digitizing and archiving. Edited digital data for the three Nova Scotia stations were purchased from the Canadian Climate Centre in Downsview, Ontario.

TABLE 1. Climatic Summary Stations

WBAN NO.	STATION NAME	LAT(°N)	LON(°W)	PERIOD OF RECORD	
				HOURLY(MO/YR)	DAILY(MO/YR)
03853	Mayport NS, FL	30-24	81-25	07/55 - 12/86	10/59 - 12/86
93831	Beaufort MCAS, SC	32-29	80-44	10/57 - 12/86	04/45 - 12/86
13880	Charleston NWS, SC	32-54	80-02	01/45 - 12/86	07/45 - 12/86
93727	New River MCAS, NC	34-43	77-26	01/55 - 12/86	01/55 - 12/86
13754	Cherry Point MCAS, NC	34-54	76-53	03/45 - 12/86	03/45 - 12/86
13750	Norfolk NAS, VA	36-56	76-17	02/45 - 12/86	02/45 - 12/86
13721	Patuxent River NAS, MD	38-18	76-25	03/45 - 12/86	03/45 - 12/86
14780	Lakehurst NAS, NJ	40-02	74-21	02/45 - 12/86	02/45 - 12/86
14734	Newark NWS, NJ	40-41	74-10	01/48 - 12/86	05/35 - 12/86
14765	Providence NWS, RI	41-44	71-25	01/49 - 12/86	01/49 - 12/86
14790	South Weymouth NAS, MA	42-09	70-56	04/46 - 12/86	04/45 - 12/86
14611	Brunswick NAS, ME	43-53	69-56	01/45 - 12/86	02/45 - 12/86
14647	Yarmouth, Nova Scotia	43-50	66-05	01/53 - 10/86	01/53 - 10-86
14633	Shearwater, Nova Scotia	44-38	63-30	01/53 - 10/86	01/53 - 10/86
14642	Sable Isle, Nova Scotia	43-56	60-02	01/53 - 10/86	01/53 - 10/86
13601	Bermuda NAS	32-22	64-40	01/49 - 12/86	01/49 - 12/86

General Circulation and Climate

The U.S. Atlantic marine and coastal study area lies within the middle latitude zone of "prevailing westerlies" downstream from the weather systems which originate over the U.S. The "westerlies" are broad global west-to-east wave-like movements of the atmosphere which extend at the surface, on the average, from about 35° to 65° latitude in the Northern Hemisphere. Imbedded in the westerlies at the upper levels, where they extend further equatorward and poleward, is the jet stream, a narrow meandering band of strong horizontal winds of 50 to 200 knots or more which are typically found within a 30,000 to 50,000 foot vertical zone.

The generation and evolution of weather systems upstream of the study area are dependent on the interactions among the different homogenous air masses which bring their unique characteristic weather into the U.S., and on the geophysical influences of the general north-south orientation of mountains, plateaus, plains, and coastal lowlands of the U.S. (see Figure 2). Latitude, geography, and the prevailing air masses (with associated winds and weather) are the primary factors which determine the climate of the region. However, air movement over the U.S. rarely prevails over any one portion of the country long enough for the subsequent development of distinctive air mass characteristics. Instead, the various weather systems swirling across the country are modified continually as they move to the north, east, and south. As a result, some of

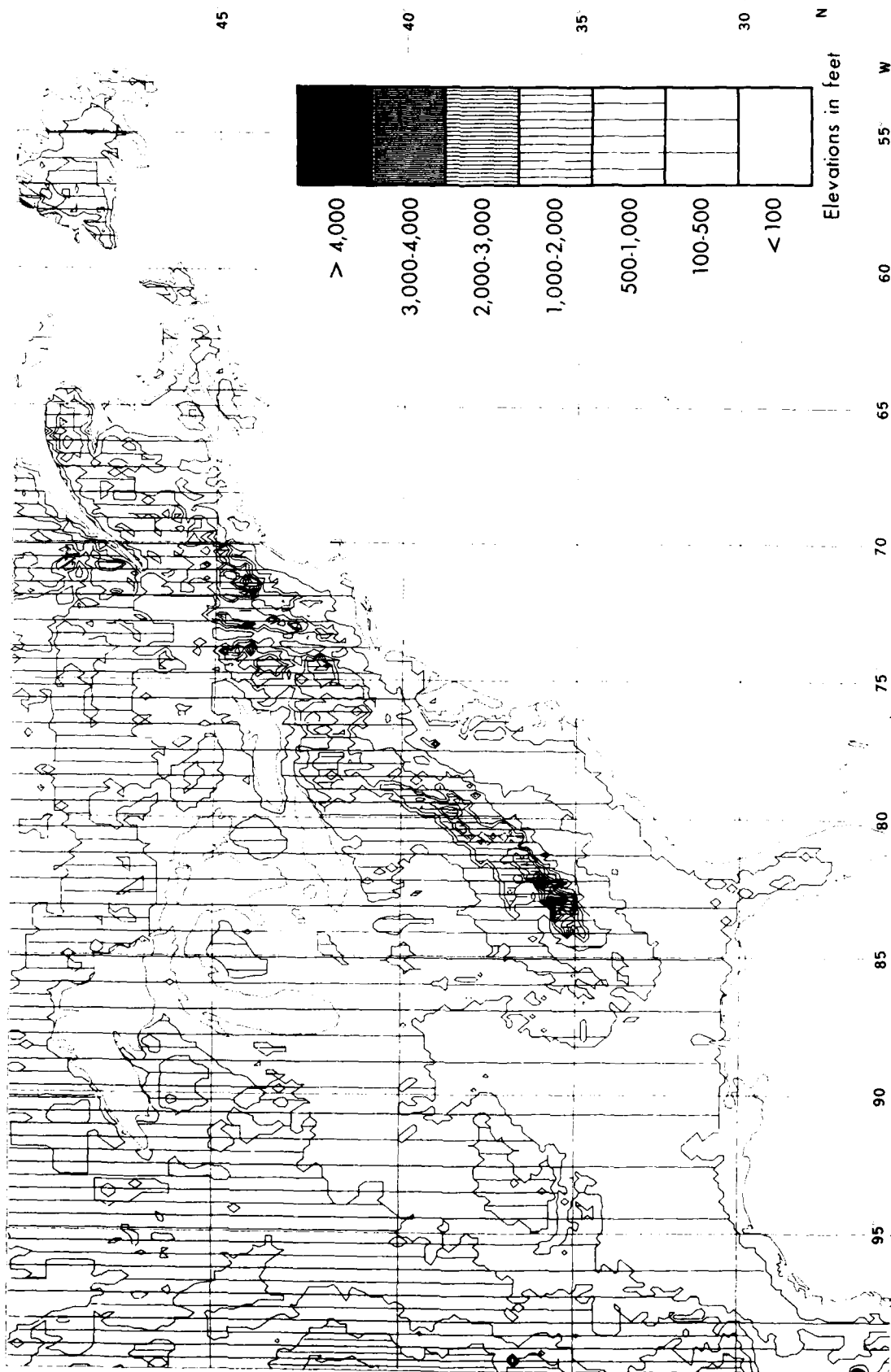


FIG. 2 TOPOGRAPHICAL CHART OF EASTERN U.S.

the most pleasant, severe, and invigorating climates in the world can be found in the United States.

The distinctive air masses which invade the U.S. are mostly the cold and dry polar continental air type from Canada; the cool and moist polar maritime air from the North Pacific Ocean, and occasionally from the North Atlantic; and the warm and moist tropical maritime air from the central Pacific Ocean and, more importantly, from the Caribbean Sea and the Gulf of Mexico. The tropical Atlantic air, pushed by the northern branch of the Atlantic trade wind circulation, sweeps westward across the tropical Caribbean Sea and northward over the Gulf of Mexico into the Gulf and Atlantic coastal lowlands and the vast plains of the U.S. interior. That broad plain of low relief, the Mississippi Valley which ranges in width some 800 nautical miles (nmi) from the mountainous weather barriers of the high Rockies on the west to the lower Appalachians on the east, is the principal region wherein the cold and dry polar and warm and moist tropical air masses frequently come together. There they ebb and flow through some 20° of latitude, from the Gulf of Mexico to Canada, as they interact and move eastward. The low-pressure frontal systems which develop along the boundary between the two air masses of different densities produce constantly varying weather patterns and adverse weather events, e.g., blizzards, ice storms, thunderstorms, tornadoes, hail, fog, floods, droughts, etc. Passage of these frontal low-pressure systems (Lows) is often followed by continental high-pressure fair-weather systems (Highs) which bring calm and clear periods with bright sunshine. The high pressure systems sometime become stagnant polluted air masses before the next weather-making Low arrives. The migrating Highs and Lows occur more frequently, are more intense, and travel faster, in winter than in summer. The average motion of the systems is 650 nmi per day in winter and 430 nmi per day in summer. The Pacific air mass affects the mountainous western third of the country and contributes to the movement of the frequent continental weather fronts and associated air masses toward the coastal regions of the eastern United States and out into the Gulf of Mexico and Atlantic Ocean. Consequently, the Atlantic coastal lowland and near coastal waters within the study area are influenced more by the land mass to the west than by the Atlantic Ocean to the east. Nevertheless, the prevailing westerlies and storm systems approaching the east coast are strongly influenced and often modified in direction, intensity, and character by the blocking effect of the Appalachian Mountains, the tempering effect of the maritime air from the Atlantic, Gulf, and Caribbean waters, and seasonal locations and intensities of the Bermuda High and Icelandic Low. (Figure 3 shows the mean position and strength during January and July of the Bermuda High and Icelandic Low.) Those influences combine to produce a more equable climate along the Atlantic coastal regions and waters of the study area than those found at continental locations at the same latitude.

The Atlantic coastal lowlands and adjacent waters in the study area can be divided at about 34° latitude into two physical regions: the South Atlantic Region, south of North Carolina and the southern extremity of the Appalachian Mountains; and the North (and Middle) Atlantic Region, which borders the Appalachian Mountains northward to Canada. The Appalachian barrier, which ranges from 2,000 to 6,000 feet in elevation, does not bar the passage of weather systems as effectively as does the Rocky Mountain system. The effects of the weather over the study area by continental weather systems which approach the Appalachian Mountains depend on storm intensity and direction of movement relative to the north-south oriented physical boundary. Eastward moving air masses, fronts, and storms cross those mountains and then move beyond them to the North Atlantic Region with little change in intensity. Systems which move northeastward toward the Appalachians tend to remain west of the mountains with a drift toward the Icelandic Low. The latter movement is along a favored path across the Great Lakes and up the St. Lawrence Valley (north of the study area). Cold air outbreaks which push out of Canada southward across the Great Lakes tend to move southward along the western Appalachian slopes. If the push is strong enough, the cold air will break around the southern end of the mountains and spread southward and eastward thereby bringing colder weather to the South Atlantic Region than that found to the north. The Appalachians also tend to block the flow of Atlantic air into the interior of the United States. Because the South Atlantic Region has no geographical weather barriers to the west, climate changes across the region are gradual; differences in climate are controlled primarily by latitude effects and general air mass and storm movements into the region.

The influence of maritime air on the coastal regions of the study area depends primarily on continental and oceanic surface air temperature differences, maritime air movement and storms, and ocean surface currents. The surface layer of air over land is warmer in summer and colder in winter than that over the adjacent Gulf and Atlantic waters. Because of these temperature contrasts, monsoon effect results over the eastern half of the U.S. with a net northward inland flow of maritime air in summer, and a southward seaward flow of cold continental air in winter. Circulations around low-pressure systems moving across the U.S. draw maritime air inland throughout the year.

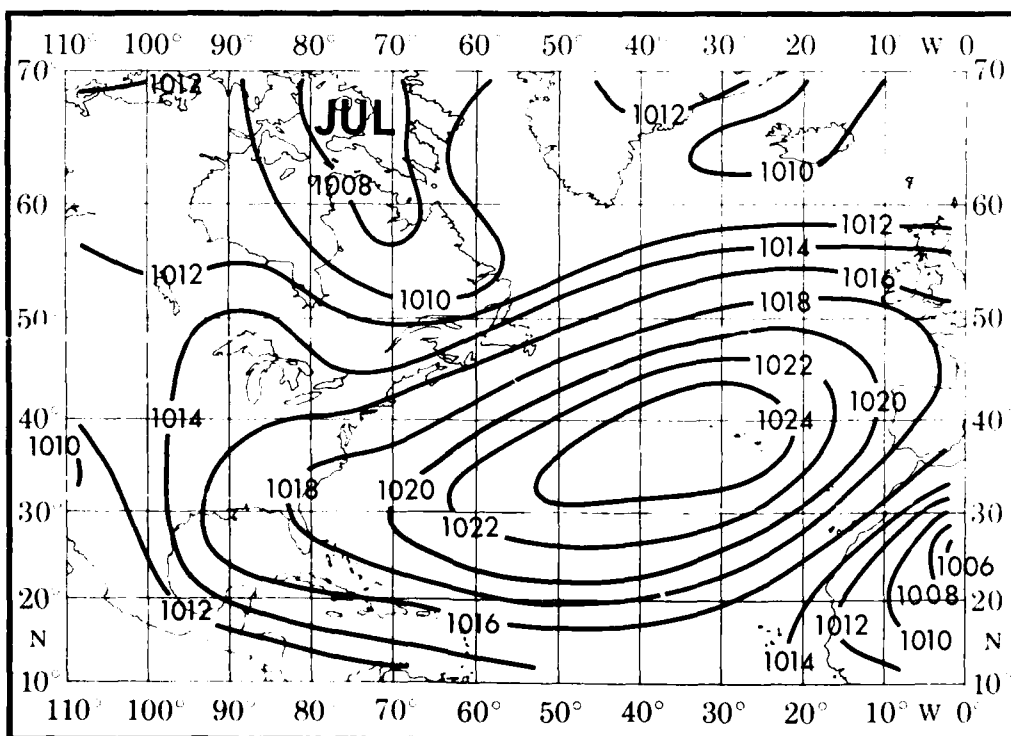
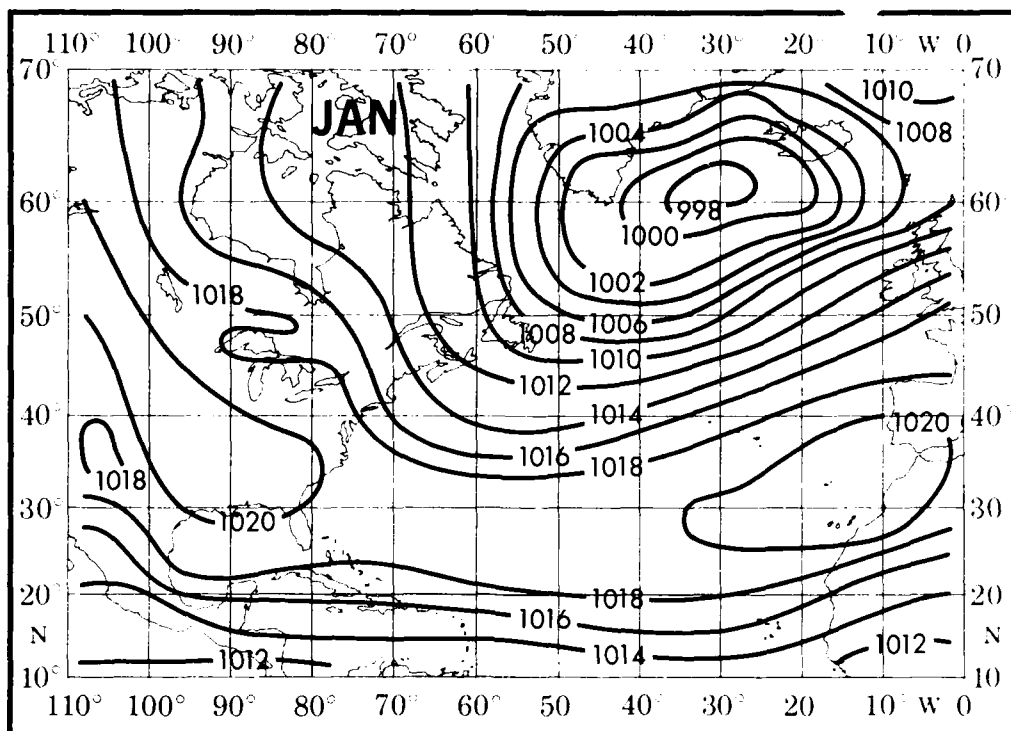


FIG. 3 MEAN SEA-LEVEL PRESSURE (JANUARY AND JULY)

In summer, the inland monsoon flow is enhanced by the wind around the western side of a stronger Bermuda High, which has migrated westward from its winter mean position over the Azores in the Eastern Atlantic. In winter, a reverse monsoon sets up when cold continental weather systems frequently move southward and eastward at a time when the Bermuda High has weakened and moved eastward. Diurnal land and sea breezes also exist over the coastal area when weather systems are not modifying the typical land/water temperature contrasts which results from diurnal surface heating.

Storm systems moving northward from the Gulf of Mexico and along the Atlantic coast, and continental cold fronts and storms bring most of the precipitation that falls in the study area. Winter systems which bring heavy snows and ice storms and very low temperatures to the Appalachian coastal states and waters occasionally reach the Gulf and South Atlantic coasts. On those occasions, freezing weather and frost conditions are reported in areas as far south as Central Florida. Winter storms along the Atlantic coast also bring heavy snow to the northern Atlantic states and coastal regions. Severe local storms, such as thunderstorms and tornadoes, and tropical cyclones up to hurricane intensity, are also superposed on the general climatic pattern of the study area.

Tropical Cyclones and Hurricanes

A tropical cyclone is a moist warm-core, rotary, counter-clockwise circulation low pressure system that develops over warm tropical waters (in the Northern Hemisphere). At maturity these storms will range in width from 100 to 600 nmi with a comparatively calm, sometimes clear, well defined center or "eye" only 10 to 30 nmi across. The tropical cyclone, with maximum winds typically occurring near the eye and to the right of the storm's forward motion, is classified according to its intensity: tropical depression, with winds of 33 knots or less; tropical storm, with winds of 34 to 63 knots; and hurricane or typhoon, with winds of 64 knots or higher. Tropical cyclones are classified as extratropical cyclones when modified by interaction with the nontropical environment of the mid-latitudes; there is no wind speed criteria and maximum winds may exceed hurricane force.

After formation, north-latitude tropical cyclones usually move to the west by northwest and often recurve north by northeast to the mid-latitude westerlies. While a few dissipate over the tropical seas, many intensify and traverse thousands of miles spending most of their lives over water before striking land and dissipating or moving north beyond their energy source, the warm tropical waters, and decaying. Their speed and direction of movement are often erratic. Usually the storm will move slowly with 10-20 knots forward speed during its development stage, slow down during its intense stage, and speed up after recurvature to forward speeds of 35 knots or more on entering the mid-latitudes. Here, they become extratropical in character and eventually decay. Before the era of aircraft reconnaissance in 1944 and weather satellites in 1960, the detection of such storms was dependent upon chance encounters with shipping or populated areas. However, concern by mariners of threats to shipping by tropical storms at sea and in port have resulted in reasonably well documented reports on occurrences of tropical cyclones since the 19th century or earlier. On the average, 82 cyclones occur annually over the globe. Figures 4 and 5 show annual average number and movement of tropical cyclones for the U.S. and associated waters.

A major hurricane, with its high winds, torrential rains, and occasional tornadoes, and resulting high waves, coastal storm tides, and flooding, all of which threaten life and property, is one of the most intense and feared storms in the world. Inundation from storm tides (surges) along coastal lowlands is the primary cause of death and destruction. In August of 1969, Camille, one of the greatest hurricanes ever recorded in North America, struck the Mississippi coast with winds up to 174 knots and tides up to 24 feet, produced record-breaking rainfall and flooding in Virginia, took 324 lives, and caused property damage estimated at \$1,424 million. Storm tides took some 6,000 lives when a hurricane struck Galveston Island in 1900. Hurricane Beulah produced 115 tornadoes over Texas in September of 1967.

The Atlantic tropical cyclone basin, one of six such basins in the world, includes much of the North Atlantic Ocean, the Caribbean Sea, the Gulf of Mexico, and a substantial portion of the adjacent coastal area. During the tropical cyclone season, which is typically during the months of June through November, the area of development migrates east-then-west within the Atlantic tropical latitudes, from the western Caribbean and Gulf of Mexico in May and June to the Cape Verde Islands near Africa by late August; after mid-September, the frequency begins to decline and the formative area retreats westward. Over the Atlantic basin, the intersection of mean tropical cyclone tracks with shipping lanes and populated island areas make it unlikely that major storms would go completely undetected, even well back into the 19th century when the detection of the storms over the oceans was less likely. The "official" Atlantic hurricane season

extends from June 1 through November 30. Figure 6 shows the total of tropical cyclone tracks occurring over 101 years for selected months.

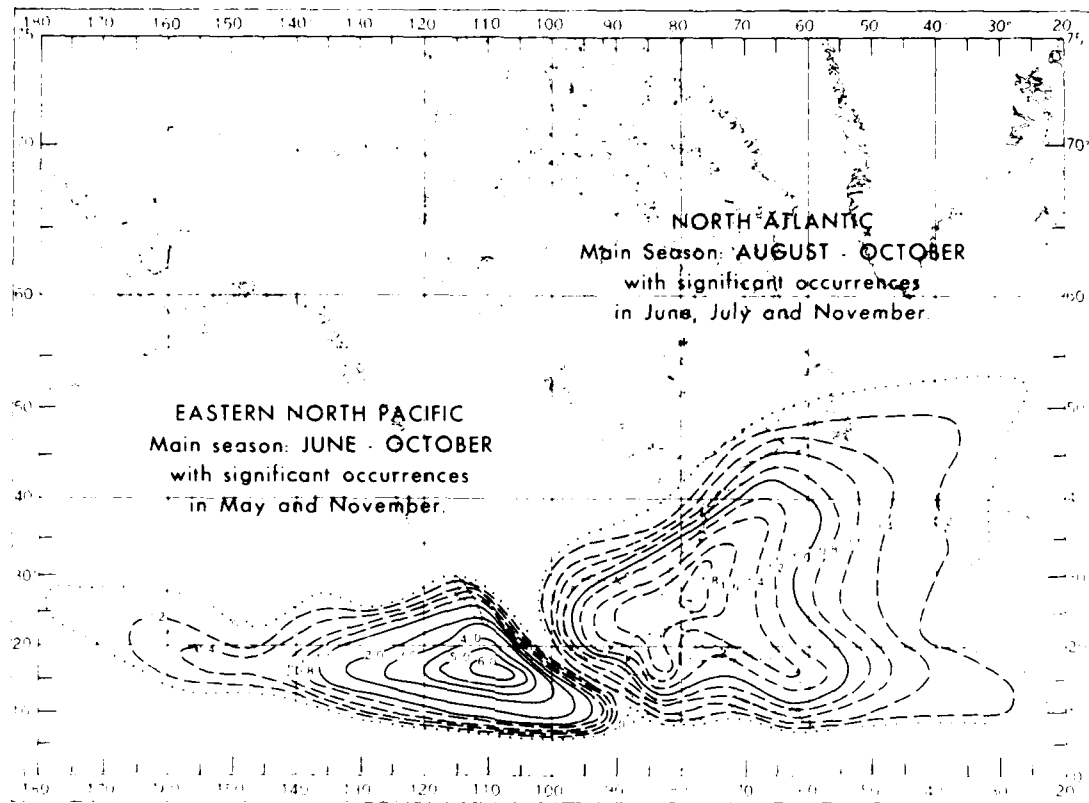


FIG. 4 ANNUAL AVERAGE NUMBER OF TROPICAL CYCLONES PER 5° SQUARE

Almost 79% of the 845 tropical cyclones having winds of 34 knots or more, that were recorded over the 101-year period from 1886 through 1986, occurred during three months: August, with 199; September, with 287; and October, with 178. April was the only month without a recorded occurrence. The average duration for these 845 tropical cyclones was 7.5 days with a range from less than two days to as many as 28 days. The number occurring in any given year varied widely, from one in 1890 and 1914 to 21 in 1933; none reached hurricane strength in 1907 and 1914, whereas 12 hurricanes occurred in 1969.

Of the 735 tropical cyclones with winds of 34 knots or more reported in the Atlantic basin during 1899-1986, 289 (39%) crossed or passed immediately adjacent to the eastern U.S. coast from Texas to Maine; 154 (53%) of these 289 were of hurricane intensity at the time of landfall. About 53% (390) of the 735 Atlantic storms either penetrated (355) or originated (35) within the study area, and had a frequency by maximum intensity of: 201 hurricanes (with 47 impacting the coastal region from northeast Florida to Maine); 138 tropical storms; 17 tropical depressions; and 34 extratropical cyclones. All coastal states within the study area were struck by one or more of these 47 hurricanes during this 88-year period. The frequency by state were: North Carolina, 24; South Carolina, 14; northeast Florida and New York, 8; Connecticut, 7; Georgia, Massachusetts, and Maine, 5; Rhode Island, 4; Virginia, 3; New Hampshire, 2; and Maryland and New Jersey, 1. Twelve hurricanes were classified as major at the time of coastal impact, with winds exceeding 98 knots and storm tides greater than 8 feet. Hurricane Donna in 1960 was the first storm in 75 years to have hurricane winds reported from Florida to Maine. Its life extended over 16 days and 7,000 nmi, originating southeast of Cape Verde Islands near Africa and then quickly becoming a hurricane within three days as it moved westward. Donna had recorded winds of 129 knots in the Florida Keys, and 82 knots on Block Island. Fifty lives were lost and property damage was estimated at \$426 million.

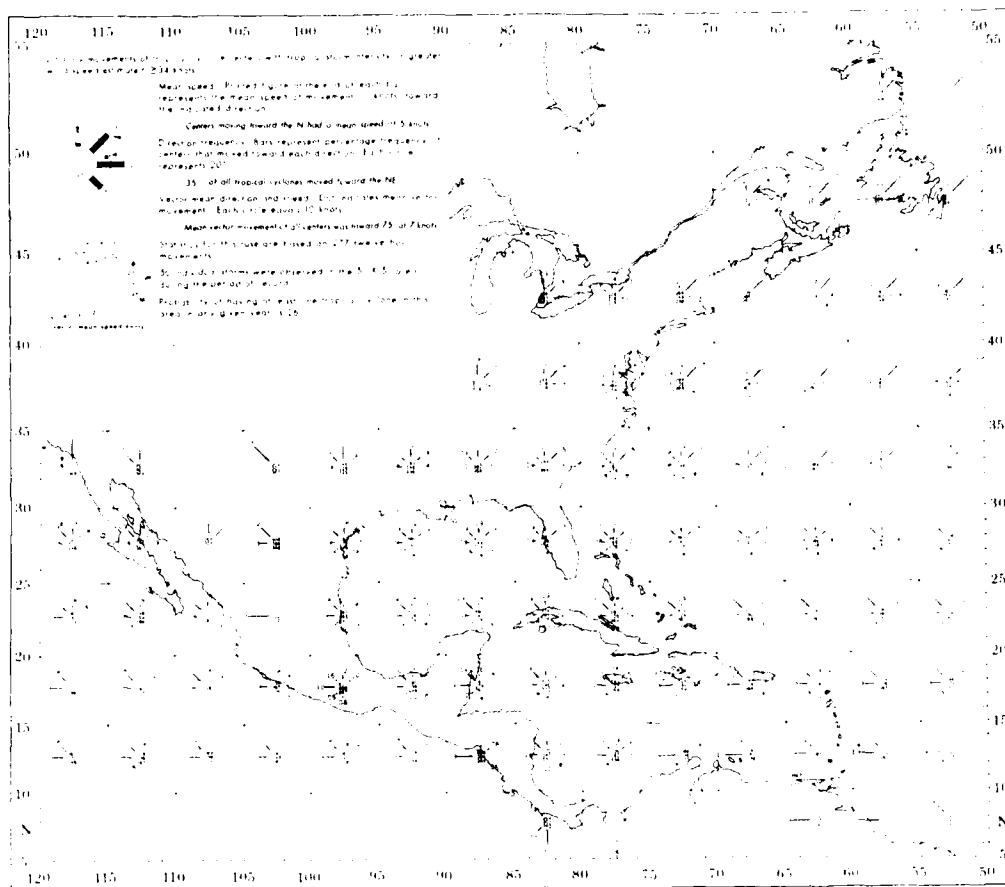


FIG. 5 ANNUAL 12-HOURLY MOVEMENTS OF TROPICAL CYCLONE CENTERS WITH TROPICAL STORM INTENSITY OF WINDS EQUAL TO OR GREATER THAN 34 KNOTS

Ocean Currents, Sea Ice and Icebergs

The climate of the study area is influenced by two Western Atlantic ocean currents, the warm Gulf Stream and the cold Labrador Current.

The Gulf Stream is a warm, well-defined, swift, and relatively broad and deep ocean current which originates north of Grand Bahama Island where the Florida Current and the Antilles Current meet. The Gulf Stream's highly saline, clear indigo blue, waters move northward closely paralleling the U.S. coast and the 100-foot fathom contour (see Figure 7) to Cape Hatteras before being deflected seaward into deeper waters. The stream, driven by the prevailing westerly winds, flows northeastward to the coastal waters of the northeastern Atlantic where it becomes a significant warming influence on the climate of northwestern Europe. From 32°N to Cape Hatteras the stream shows some lateral meandering which generally does not exceed 40 miles (about one stream width). Downstream of Cape Hatteras, the stream's meandering increases with ocean depth and may reach a north-south extent of 270 miles or more. East of 65°W, meanders occasionally generate eddies or current rings along the stream's edges, which separate and move north into colder waters as clockwise rotating warm eddies or south into warmer Sargasso Seawaters as counter-clockwise rotating cold eddies. On the average, about 15 eddies are formed each year and move 1 to 2 miles a day, exist 1 to 2 years, and eventually move southwestward to be absorbed by the Gulf Stream. A zone of rapidly falling sea surface temperature, called the North Wall, is found between the left edge of the Gulf Stream and the colder coastal waters from Florida to the Grand Bank of Newfoundland and beyond. This North Wall is frequently very striking and is a definite indication of the stream's left edge. Although the speed and position of the stream's axis fluctuate from day to day, average surface flow along the axis is 2.5 knots, increasing to 4.5 knots

off Cape Florida near Miami where the cross sectional area of the channel is least. The average position of the axis is about 13.5 miles seaward of the North Wall.

Winter and spring storms passing over the Gulf Stream along the east coast of the U.S. may be modified rapidly enough to create dangerous wind and wave conditions. This is especially true along the North Wall. During February and March the shelf waters are at their coldest while the Gulf Stream remains relatively warm. Also, from the North Wall to 10 to 20 miles into the Gulf Stream, strong northeasterward moving currents are encountered. The northeasterly winds of intense coastal storms tend to pull cold Arctic air across the slope water to near Cape Hatteras. As this cold air reaches the North Wall and the Gulf Stream, it encounters rapidly increasing sea surface temperatures. This sudden warming produces a significant increase in wind speeds and gustiness which, in turn, generates higher and confused seas. In addition, the opposing winds and ocean currents of 3 to 5 knots result in a sharp increase in wave heights and much steeper wave slopes. Waves may even break. The 20- to 30-foot waves that result can be dangerous to any ship. The Gulf Stream also influences the climate of the U.S. Atlantic coast because winds which blow across this warm stream of water pick up heat and moisture and transport it over land.

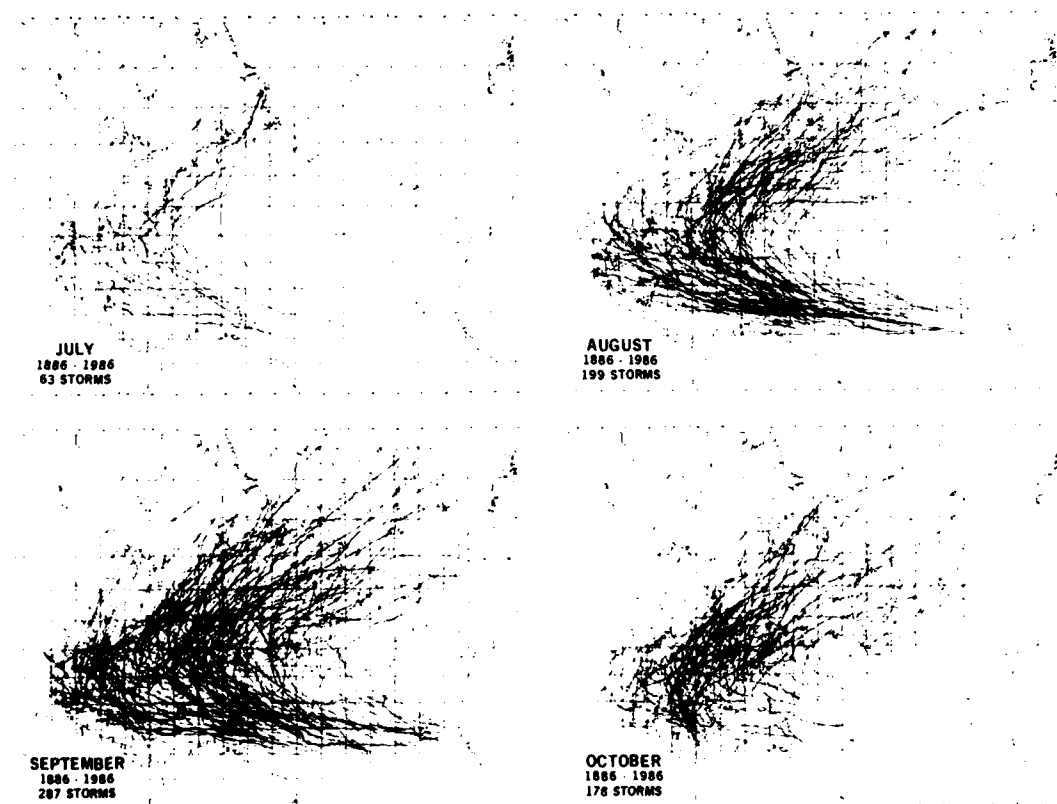


FIG. 6 TROPICAL CYCLONE TRACKS FOR 101 YEARS, 1886-1986 (JULY, AUGUST, SEPTEMBER AND OCTOBER)

The Labrador Current originates in Baffin Bay west of Greenland at about 70° latitude. With temperatures of 0°C or less it flows southward through the Davis Strait, and southeastward along the Newfoundland coast to the Grand Banks area southeast of Newfoundland. Here, at about 40°N and 50°W, the cold current meets the warm Gulf Stream and a part of it moves northeasterward with the Gulf Stream, separated from the warm current by the North Wall. The western leg of the Labrador Current flows west and then south along the U.S. Atlantic coast to as far as Norfolk, VA. The presence of the cold surface current exerts a moderating influence on the climate of the immediate coastal and near offshore regions. In summer, southerly winds bring moist warm air over these colder waters where the cooling of the air tends to form advection fog. Steam fog (sea smoke) occasionally forms in winter during very cold weather when the air temperature is much lower than that of the water. The fog layer is usually quite shallow, and at times may hide the hull of a ship while leaving the masts and upper parts plainly visible.

This contrast of surface temperatures also contributes to cyclogenesis, or storm formation, off the east coast.

The Arctic Labrador Current also brings icebergs south, which then threaten the North Atlantic ship traffic. Most of the icebergs entering the North Atlantic originate on the west coast of Greenland north of 68° latitude, where some 100 glaciers give birth to some 15,000 icebergs a year. Annually, on the average, some 400 of these icebergs drift south of 48° latitude, and over the years a few have been observed within the study area during most months of the year.

The southern limit of the Arctic sea ice rarely extends into the North Atlantic south of 45° latitude. This occurs only in the Western Atlantic along the path of the Labrador Current, primarily during late April and early May. Coastal sea ice may form along the coastline of the study area as far south as Virginia at sometime during winter. Latitude, coastal configuration, the temperature of coastal waters, and the severity of winter determine the extent and duration of ice formation and coverage. Ice formation is mostly local along the shores of sheltered bays, sounds, inlets and harbors, and extending outward to obstruct navigation. Ice sometimes covers the entire waterways and closes harbors. Growth may be rapid with calm or light winds, while strong winds disturbing the water surface either prevent ice formation or break up existing ice and move the drifting ice to the lee shore. Movement of drift ice by winds, tides, and currents can pile up the ice to where it becomes a hazard to navigation.

Marine Climatological Elements

The following climatological charts are grouped in element order for a given month in monthly calendar order. The legend on each monthly element chart defines the displayed statistics, and provides detailed examples for the graph and table presentations. The intent of this atlas publication was to gather and present existing data on climatological conditions within the marine and near coastal zone of the U.S. Atlantic coast and associated waters within the study area. The data are presented without discussion and interpretation. Given the information in the legend descriptions, and the number of observations displayed with the graphics presentations, the user should be able to interpret the climatology for a given month and location within the area.

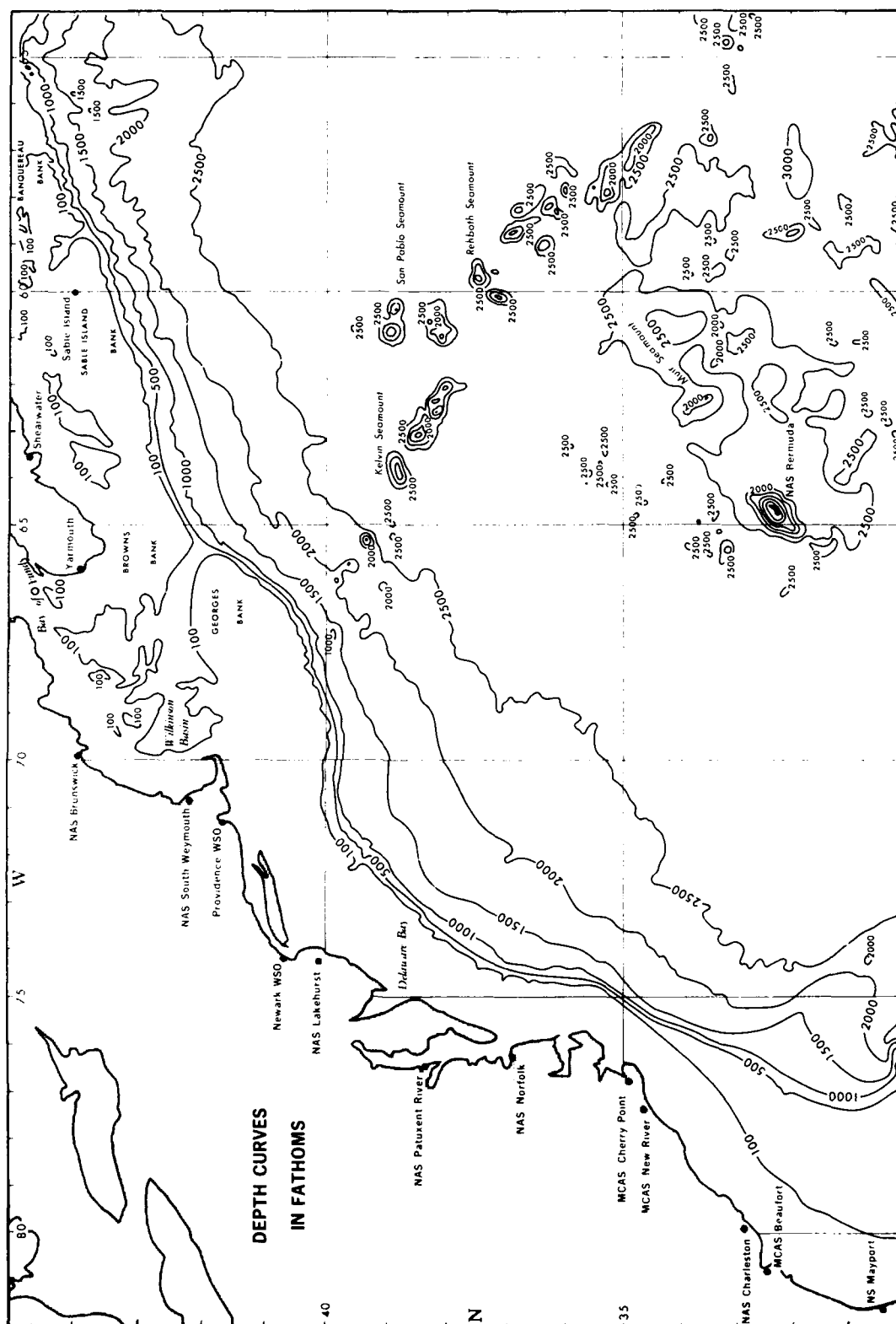


FIG. 7 BATHYMETRY CHART

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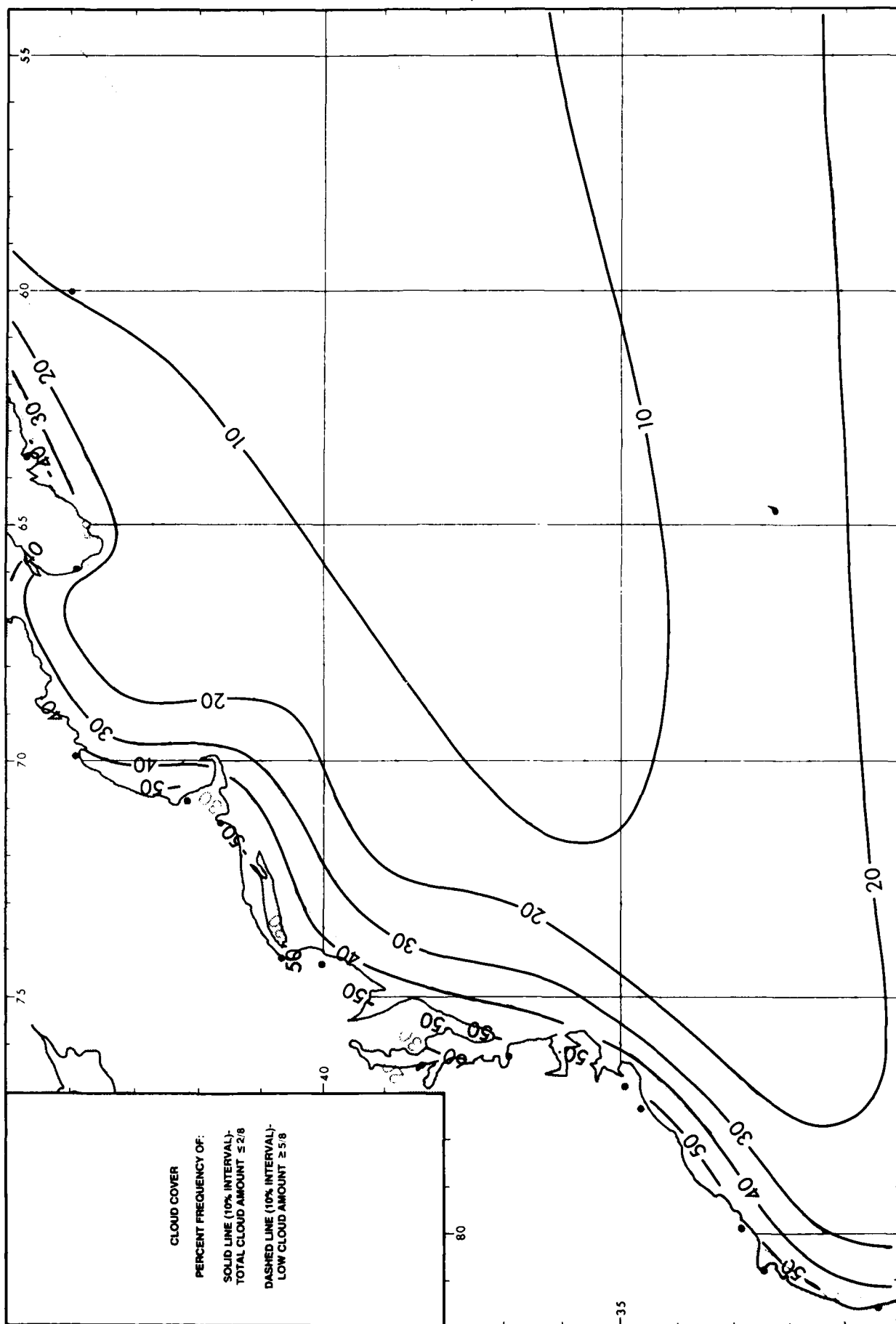
INDEX (page numbers)

EXAMPLE: The 'MEAN SCALAR WIND SPEED' for July is found on page 129.

MONTH	ELEMENT																
	CLOUDS	PRECIPITATION	VISIBILITY-TABLES	CEILING/VISIBILITY (LOW RANGE)	CEILING/VISIBILITY (MID RANGE)	WIND/VISIBILITY/CLOUDINESS	MEAN SCALAR WIND SPEED	SURFACE WIND ROSES	MEAN AIR TEMPERATURE	MEAN SEA SURFACE TEMPERATURE	WAVE HEIGHT-TABLES	WAVE MIXED LAYER DEPTH	STATION CLIMATIC SUMMARIES				
JANUARY	2	3	4	6	7	8	9	10	11	12	14	15	16	18	19	20	242
FEBRUARY	22	23	24	26	27	28	29	30	31	32	34	35	36	38	39	40	
MARCH	42	43	44	46	47	48	49	50	51	52	54	55	56	58	59	60	
APRIL	62	63	64	66	67	68	69	70	71	72	74	75	76	78	79	80	
MAY	82	83	84	86	87	88	89	90	91	92	94	95	96	98	99	100	
JUNE	102	103	104	106	107	108	109	110	111	112	114	115	116	118	119	120	THRU
JULY	122	123	124	126	127	128	129	130	131	132	134	135	136	138	139	140	
AUGUST	142	143	144	146	147	148	149	150	151	152	154	155	156	158	159	160	
SEPTEMBER	162	163	164	166	167	168	169	170	171	172	174	175	176	178	179	180	
OCTOBER	182	183	184	186	187	188	189	190	191	192	194	195	196	198	199	200	
NOVEMBER	202	203	204	206	207	208	209	210	211	212	214	215	216	218	219	220	257
DECEMBER	222	223	224	226	227	228	229	230	231	232	234	235	236	238	239	240	

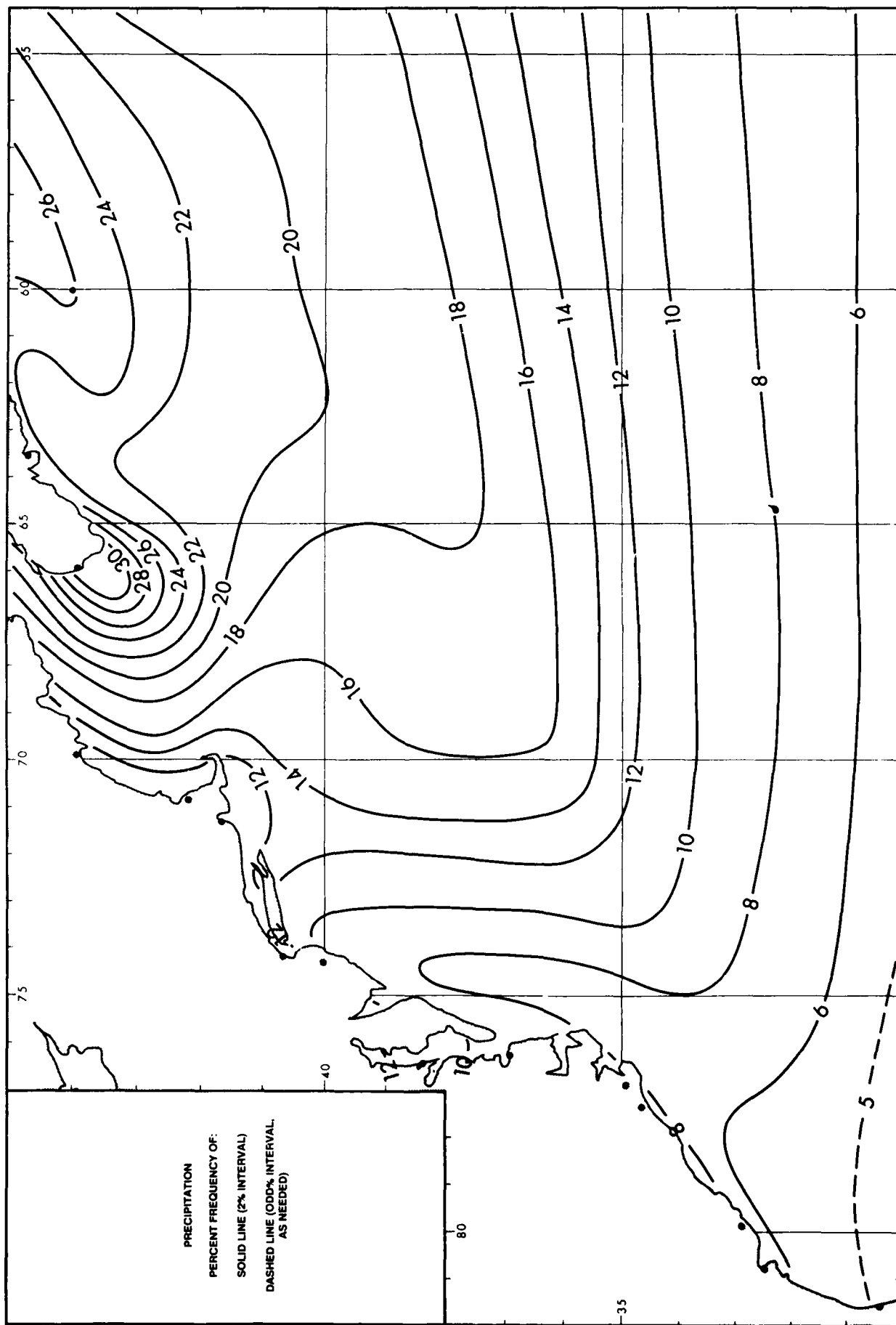
January

Clouds



January

Precipitation

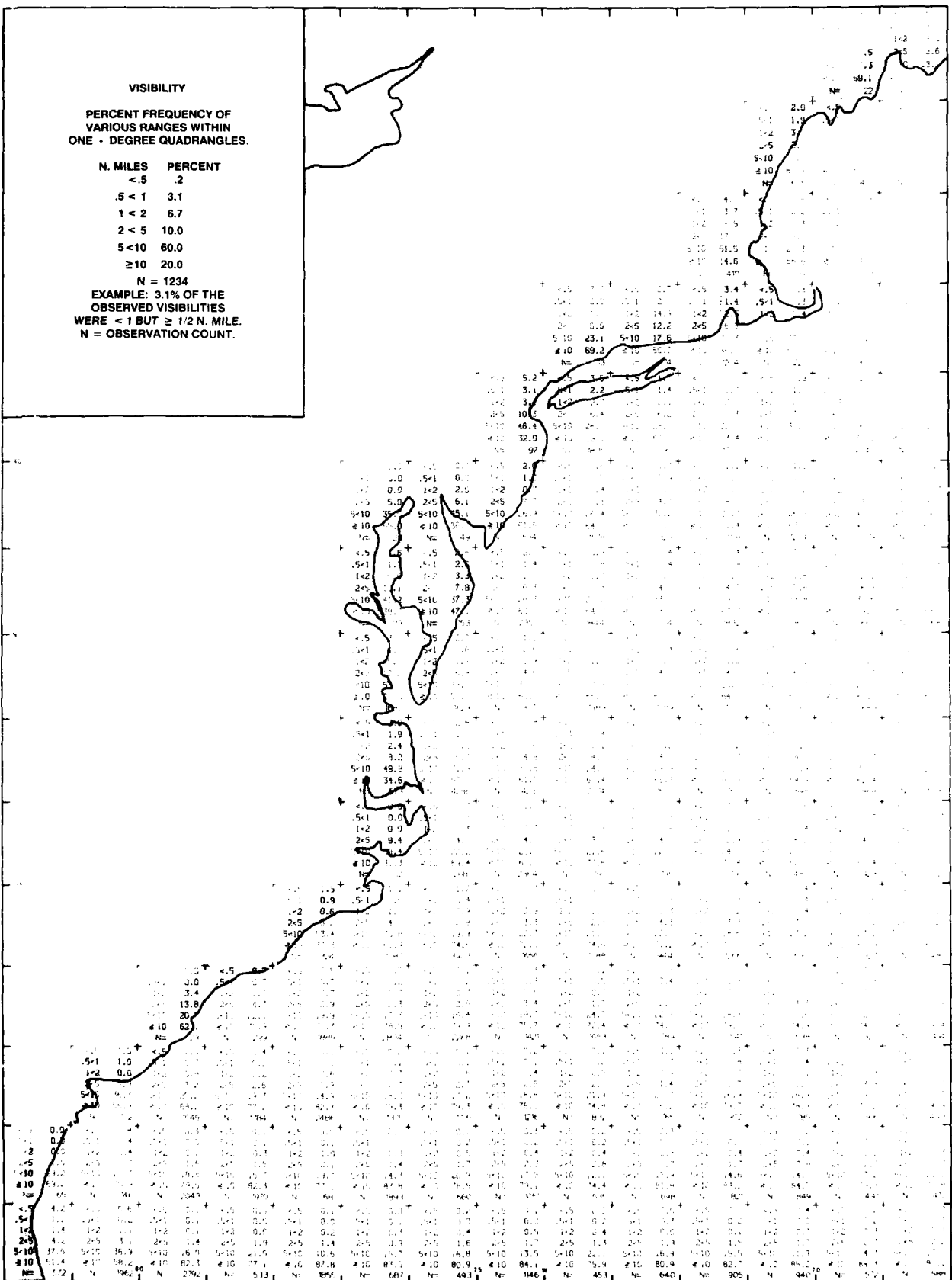


VISIBILITY
PERCENT FREQUENCY OF
VARIOUS RANGES WITHIN
ONE - DEGREE QUADRANGLES.

N. MILES	PERCENT
<.5	.2
.5 < 1	3.1
1 < 2	6.7
2 < 5	10.0
5 < 10	60.0
≥ 10	20.0

N = 1234

EXAMPLE: 3.1% OF THE
OBSERVED VISIBILITIES
WERE < 1 BUT ≥ 1/2 N. MILE.
N = OBSERVATION COUNT.



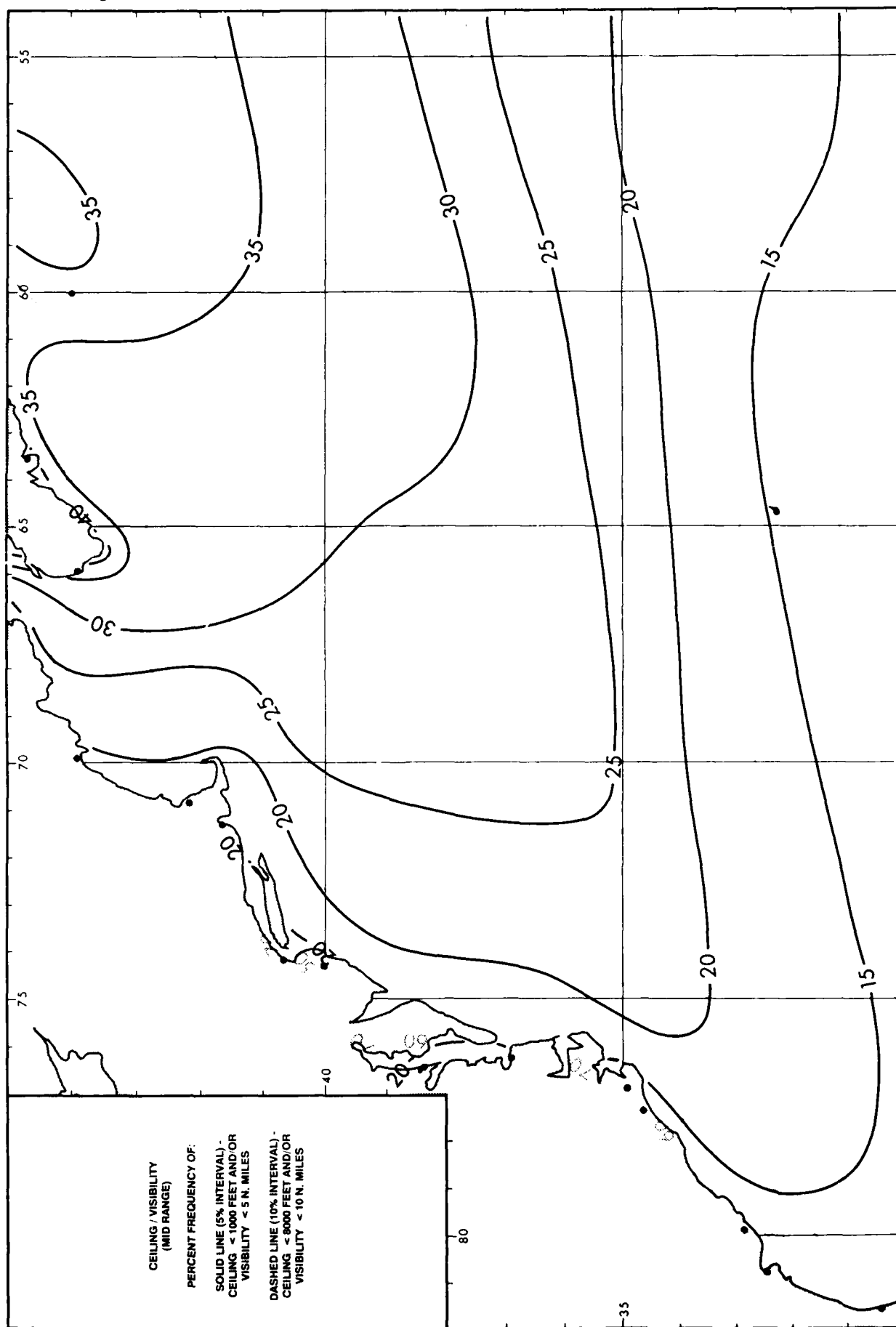
January

January

[illegible]

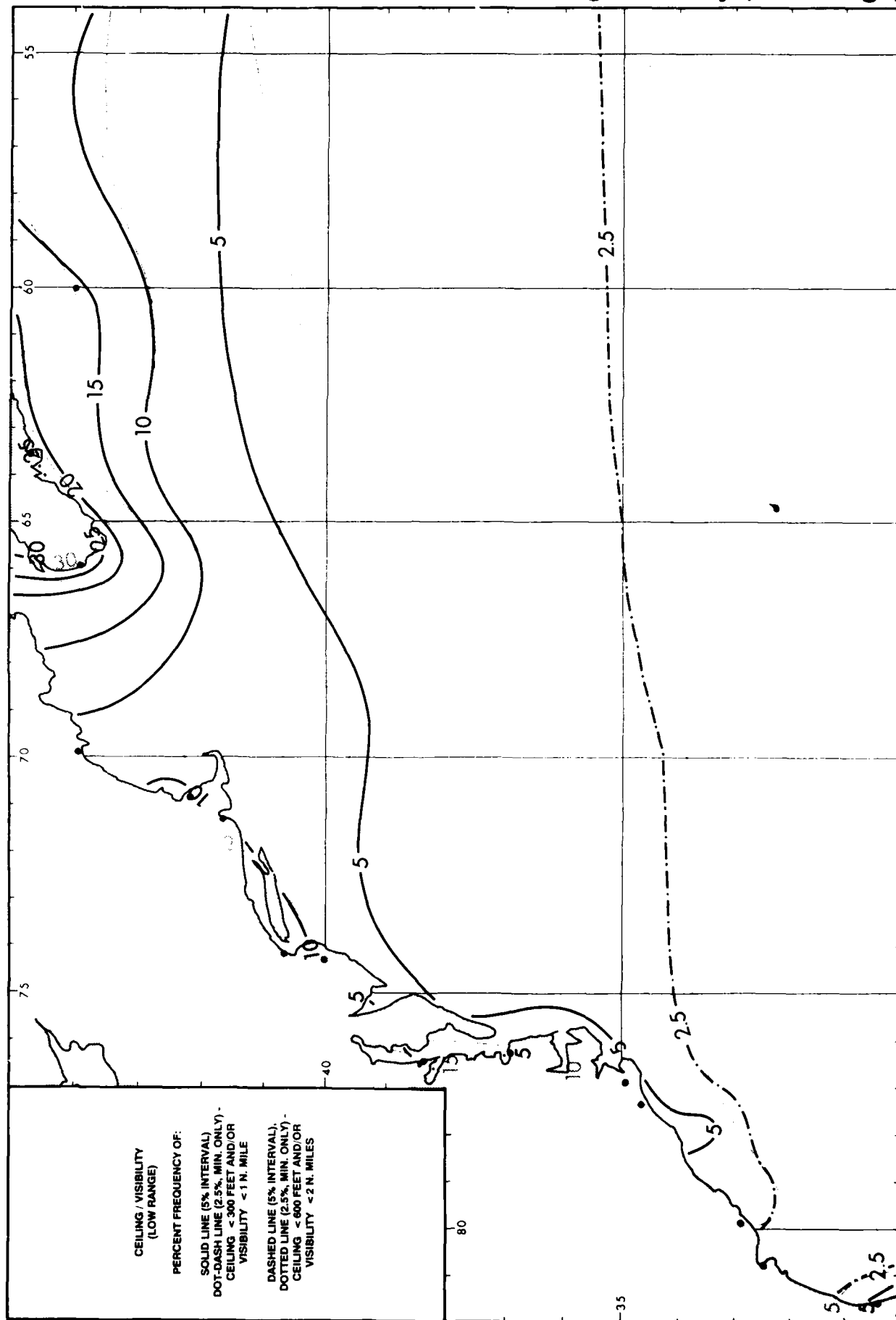
January

Ceiling/Visibility (Mid Range)



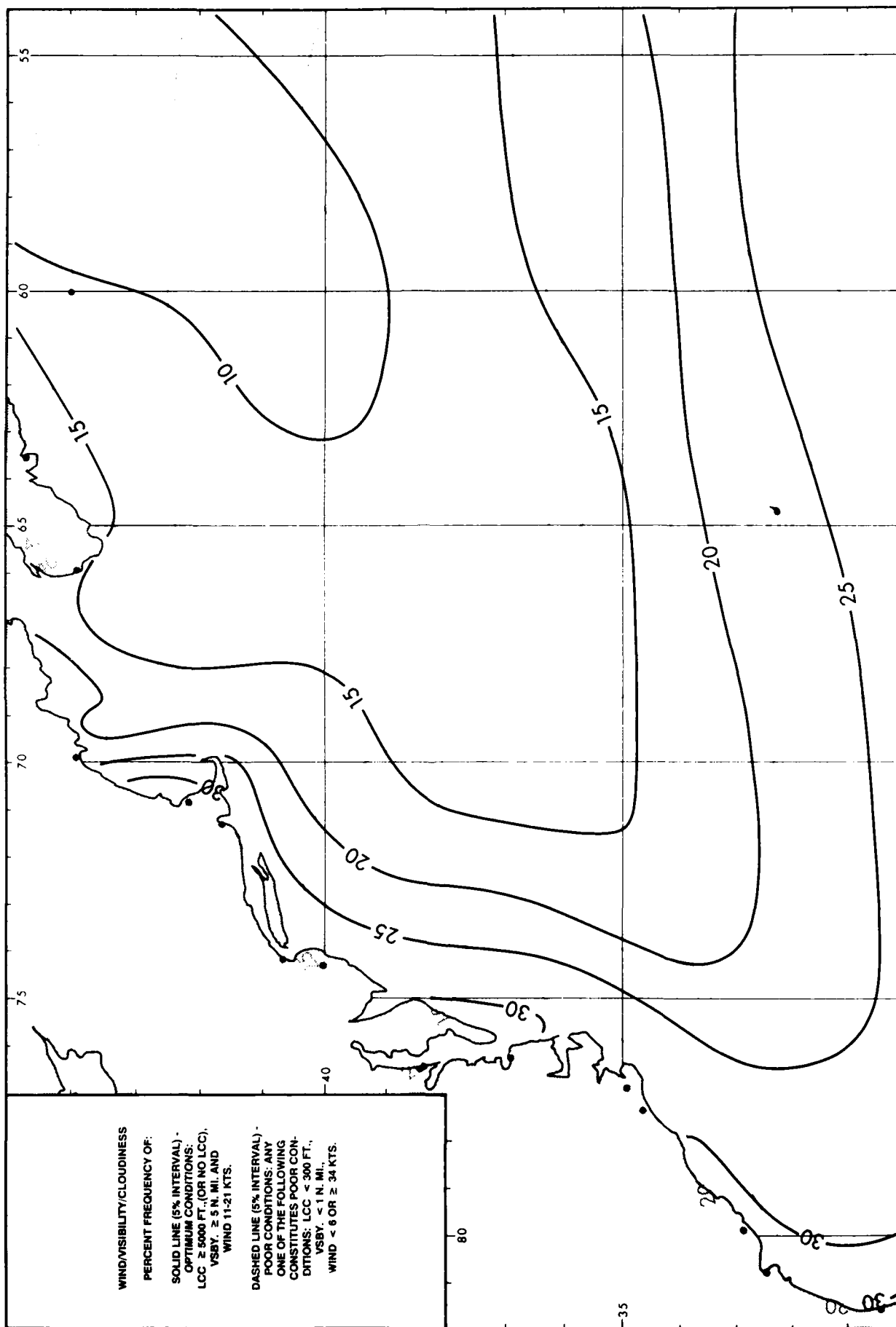
January

Ceiling / Visibility (Low Range)



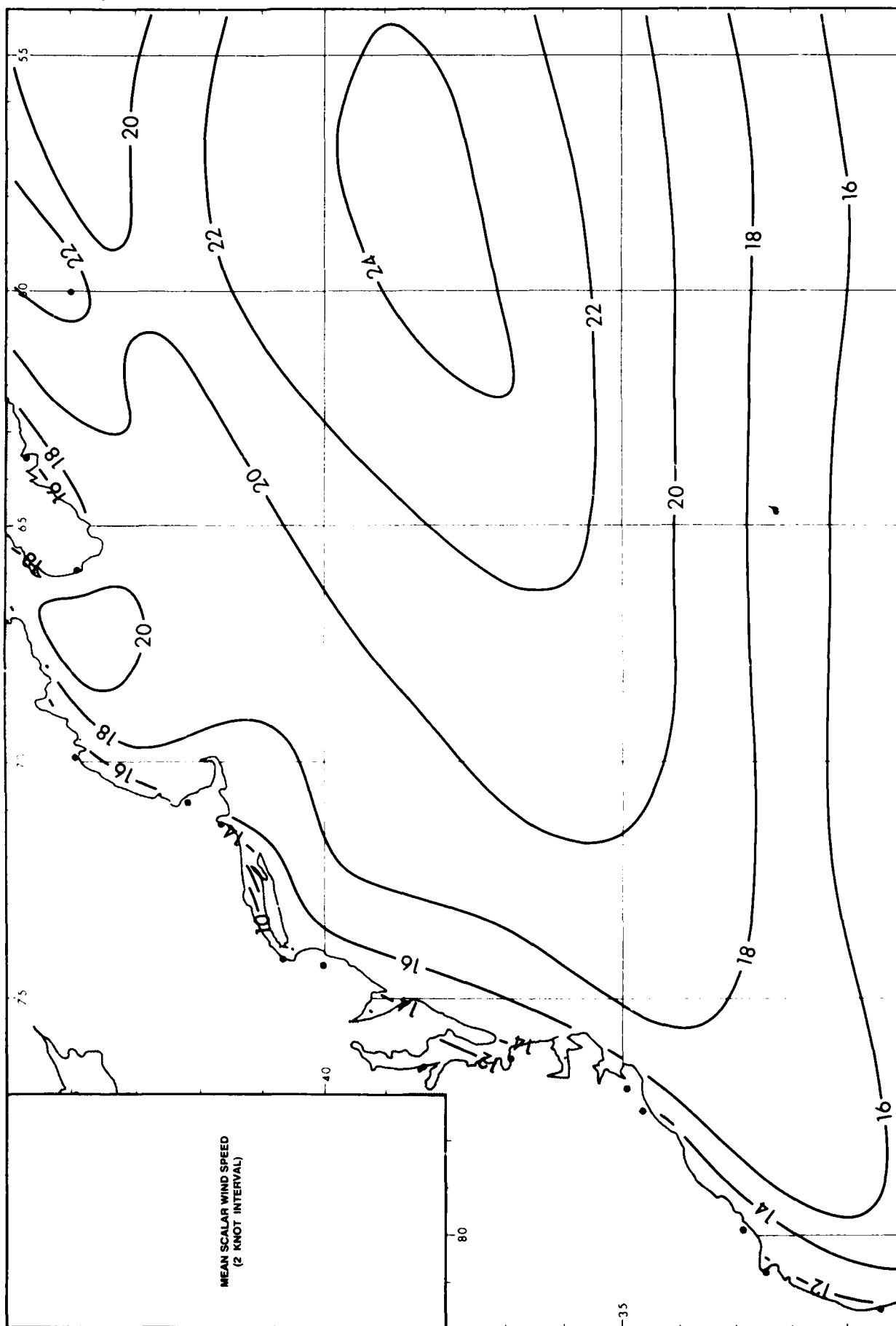
January

Wind / Visibility / Cloudiness



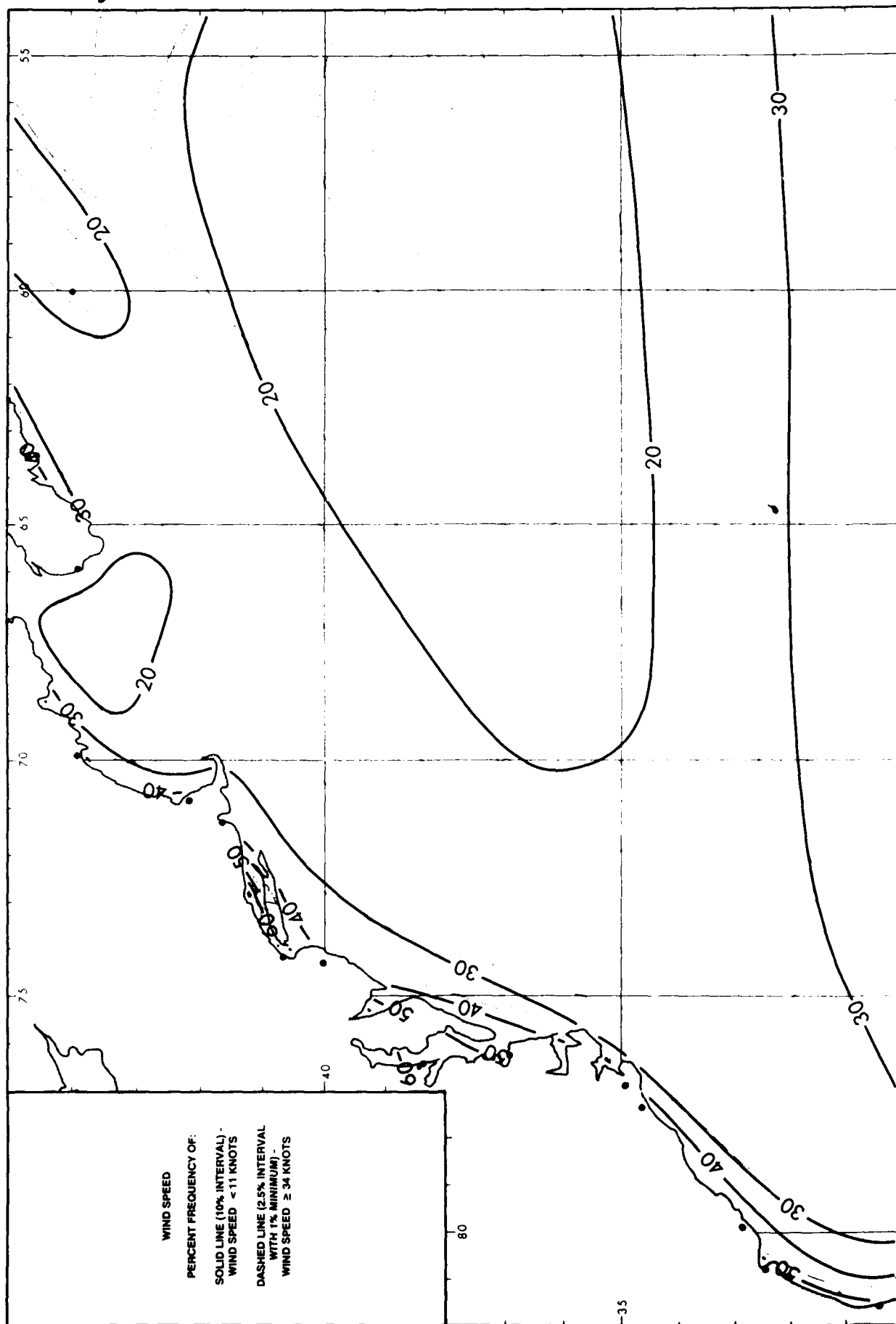
January

Mean Scalar Wind Speed



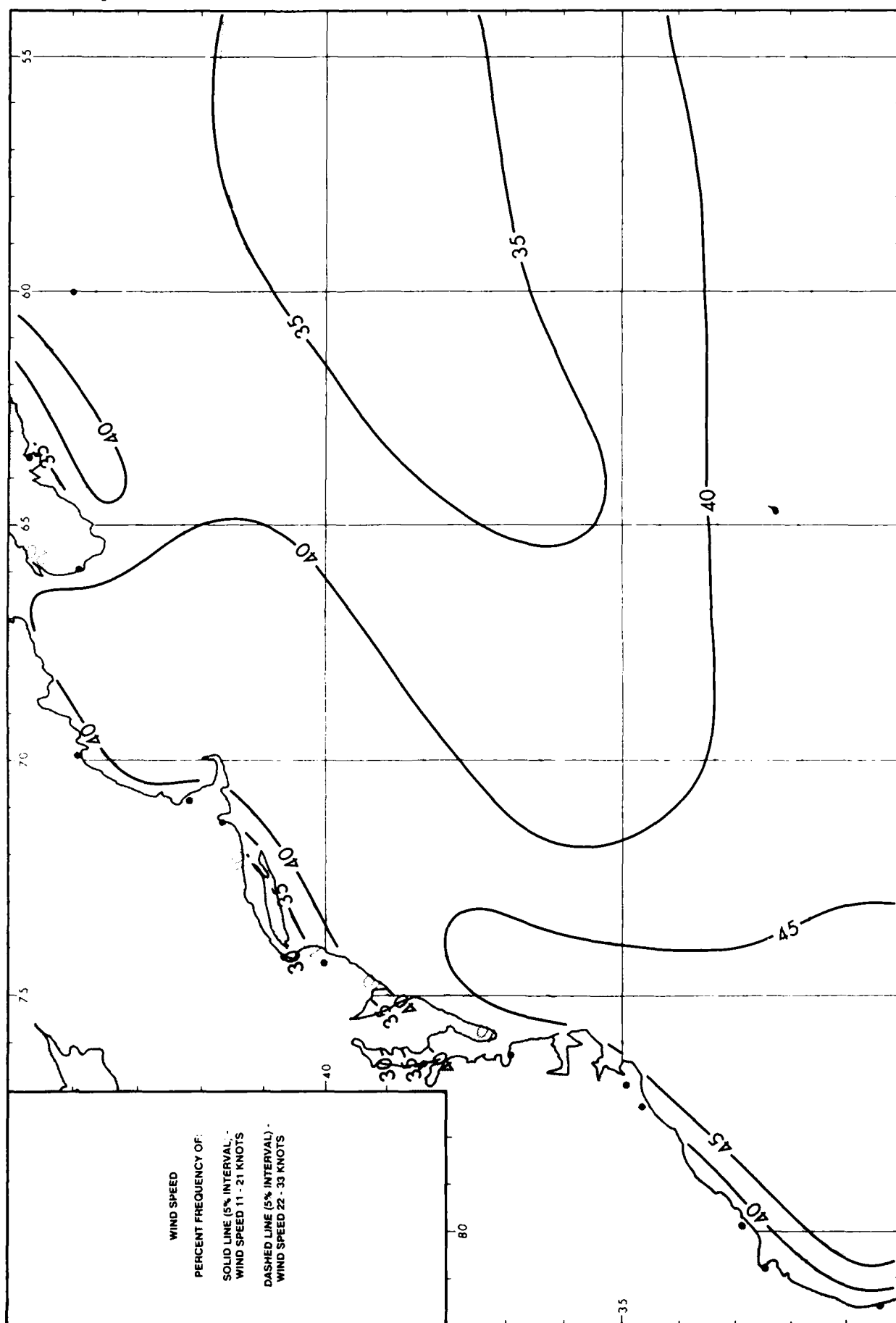
January

Wind Speed <11 and ≥ 34 Knots



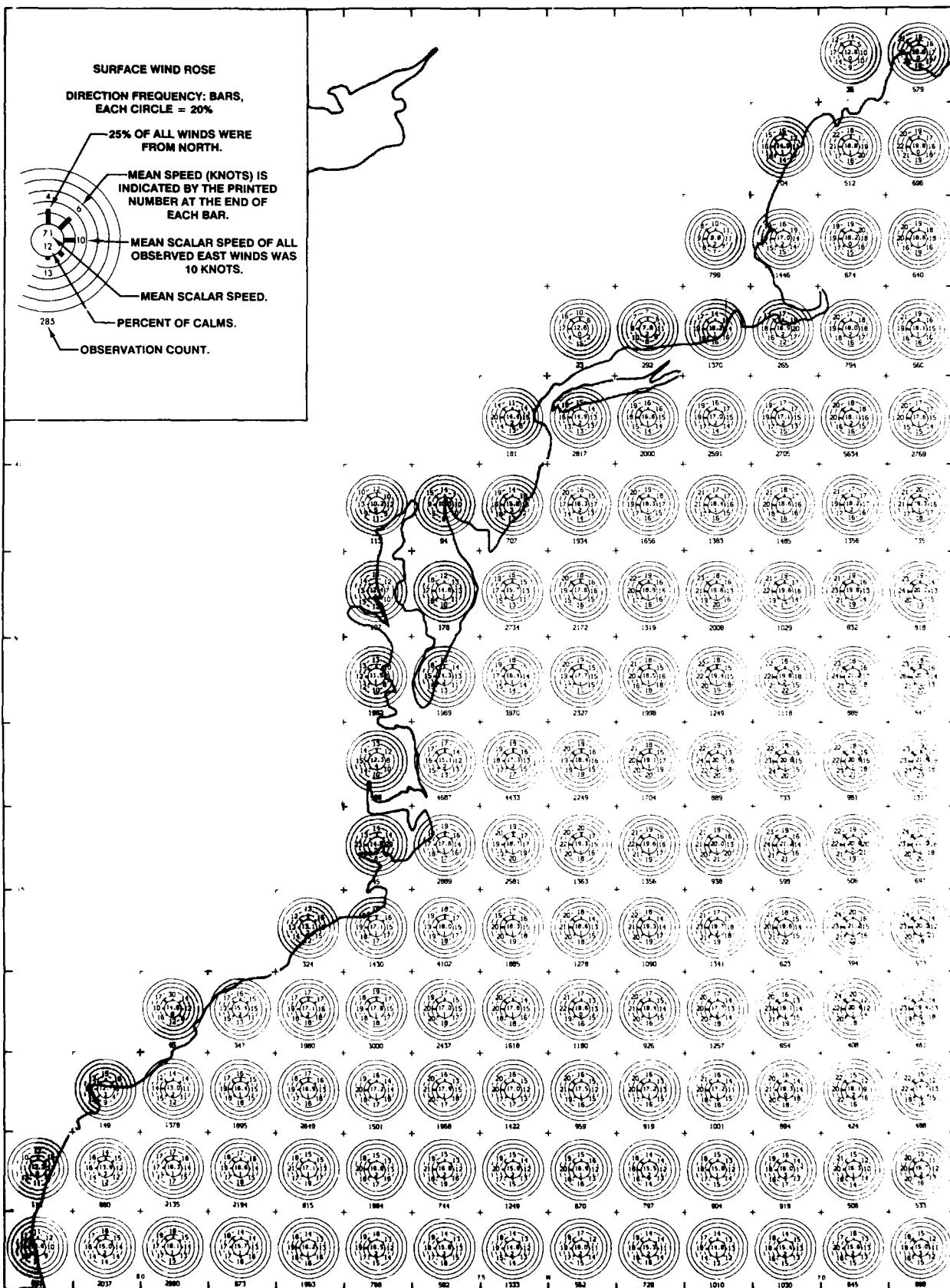
January

Wind Speed 11 - 21 and 22 - 33 Knots



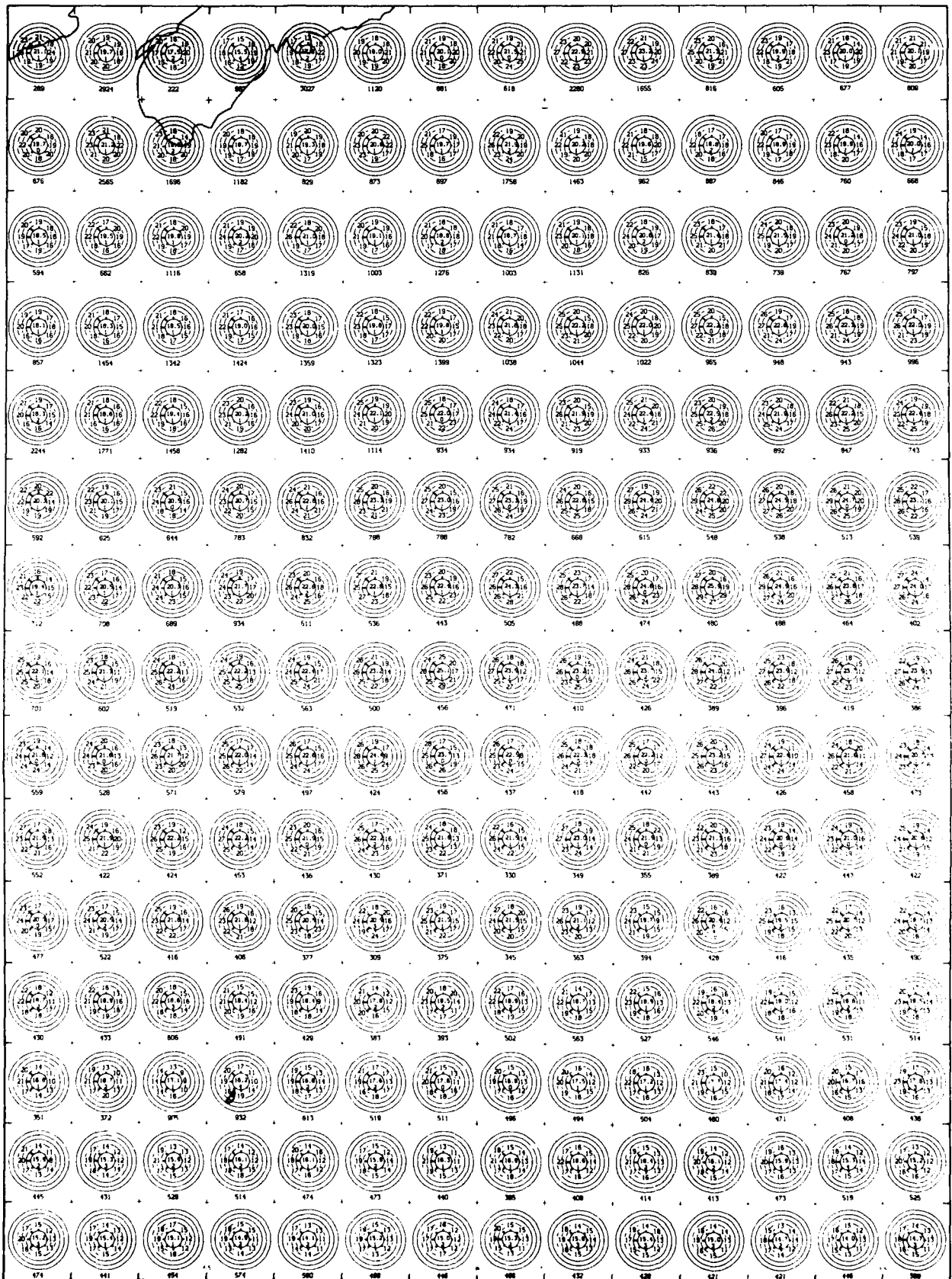
January

Surface Wind Roses



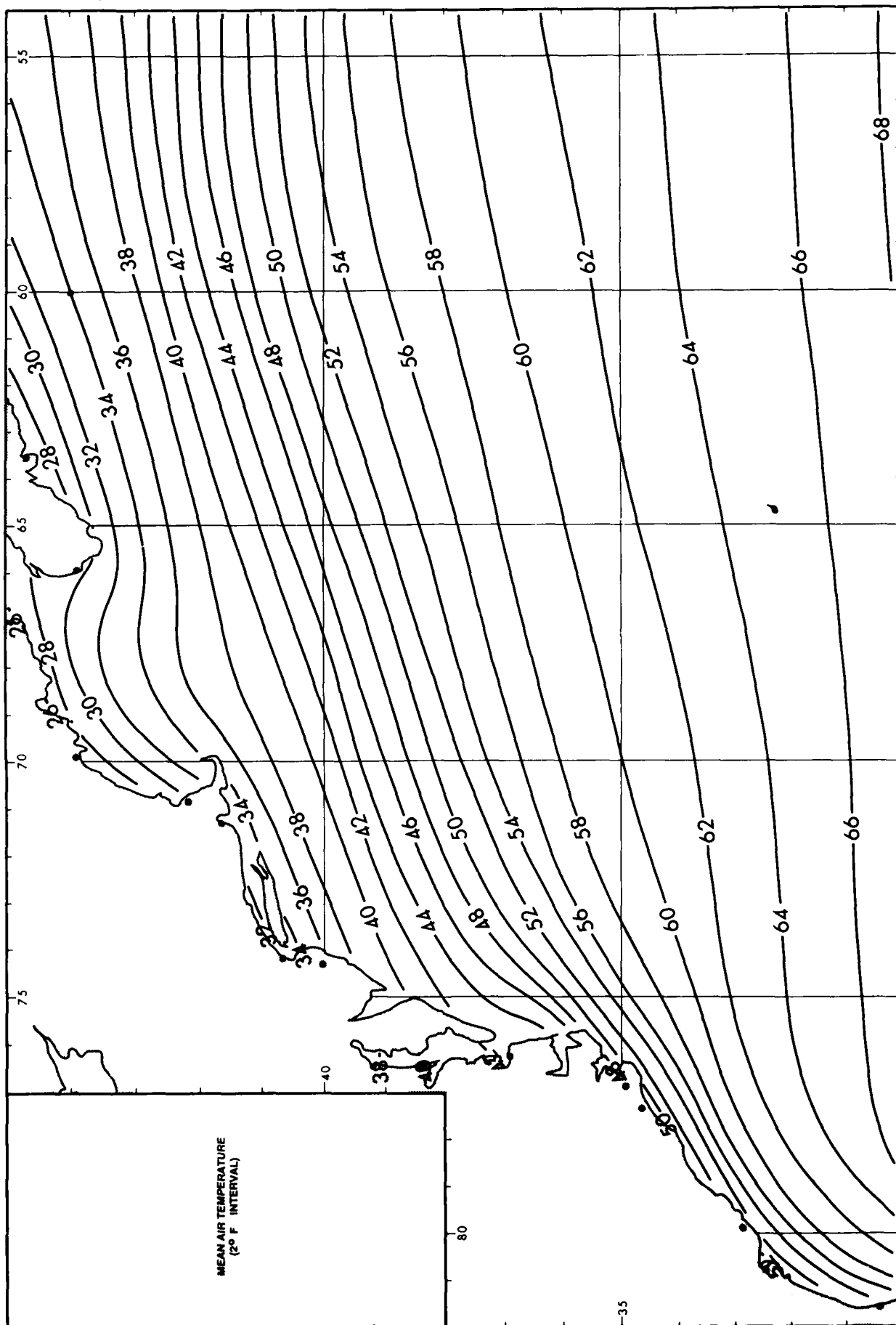
January

Surface Wind Roses



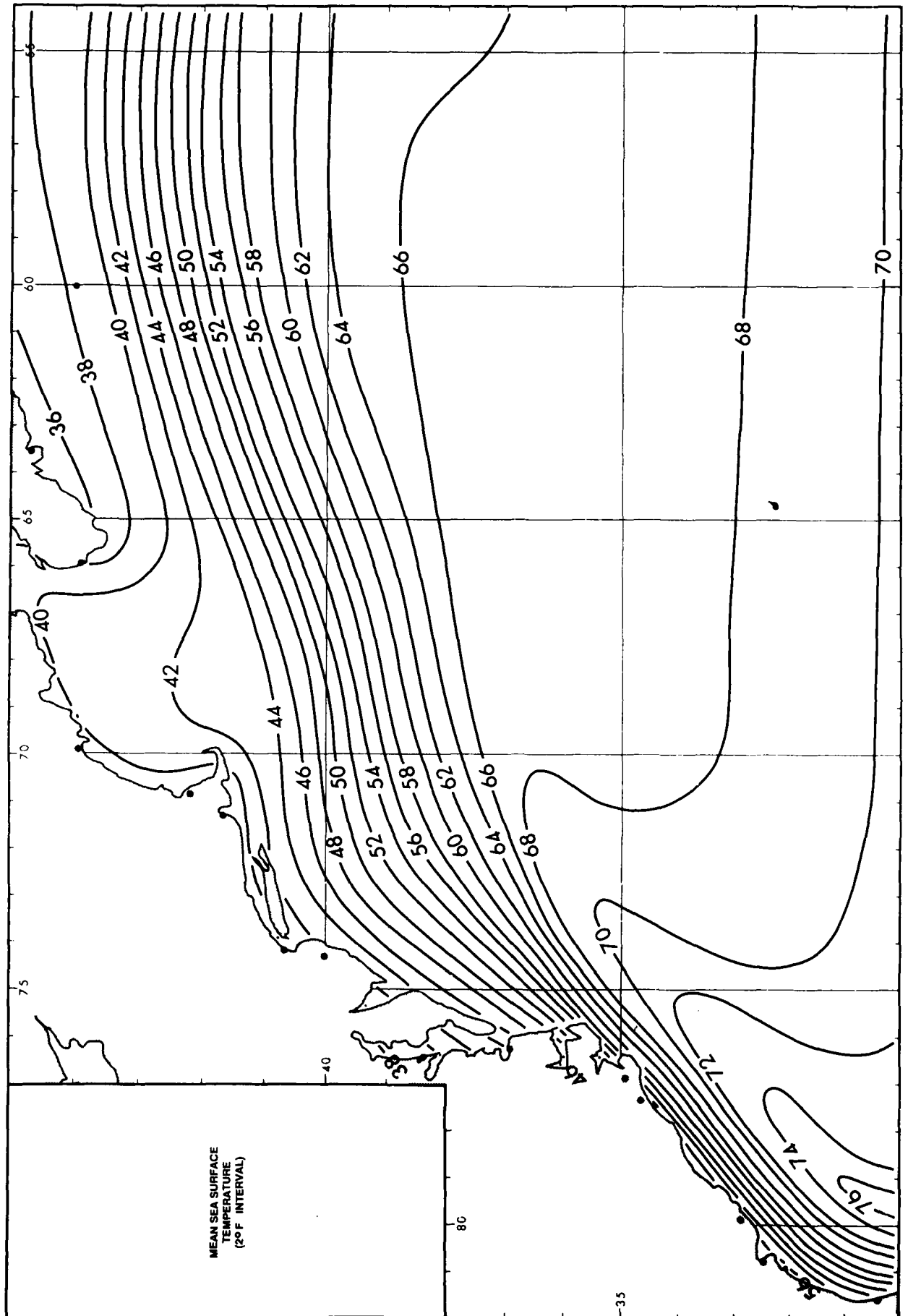
January

Mean Air Temperature



January

Mean Sea Surface Temperature

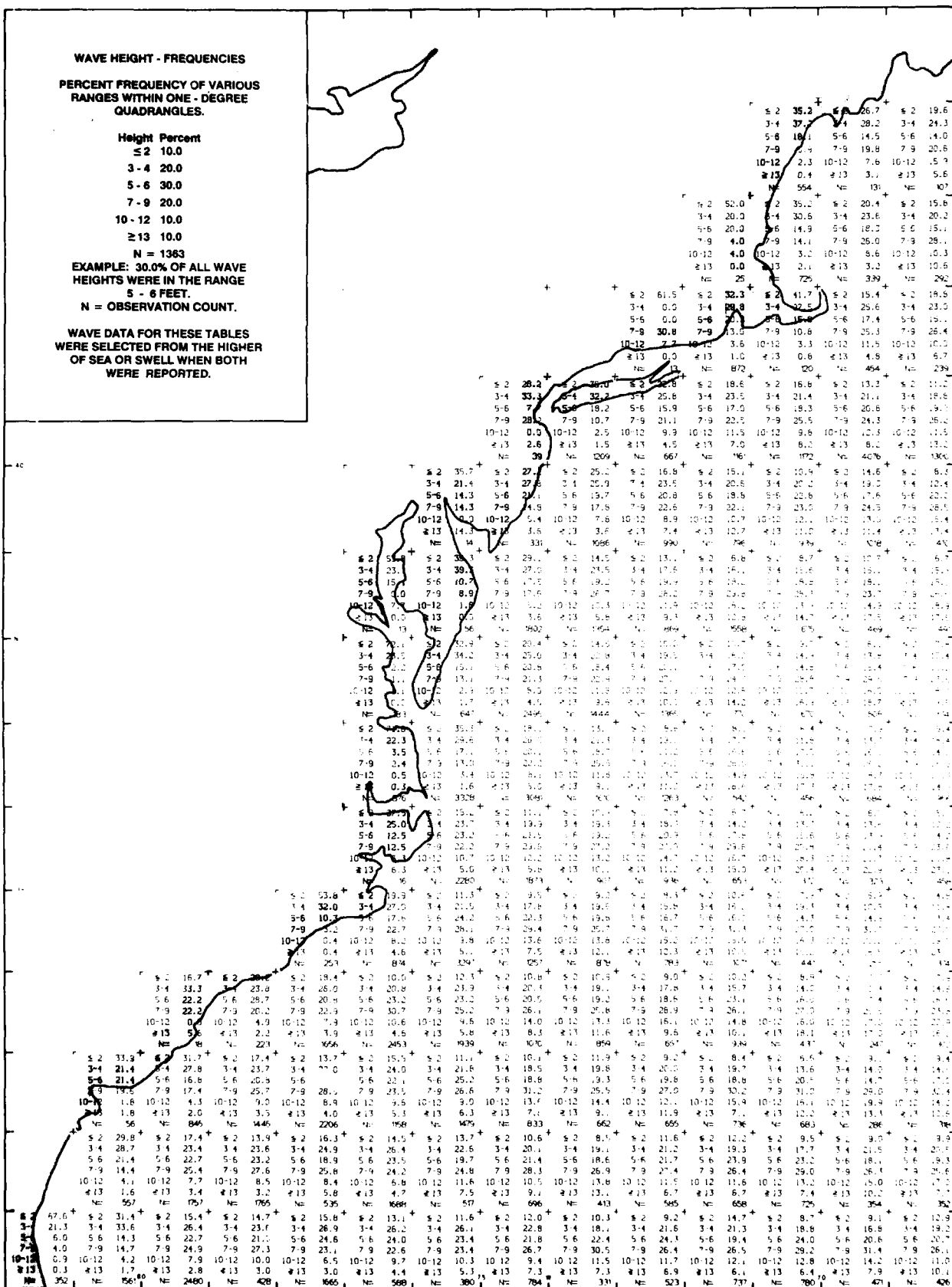


WAVE HEIGHT - FREQUENCIES
PERCENT FREQUENCY OF VARIOUS
RANGES WITHIN ONE - DEGREE
QUADRANGLES.

Height	Percent
≤ 2	10.0
3 - 4	20.0
5 - 6	30.0
7 - 9	20.0
10 - 12	10.0
≥ 13	10.0

EXAMPLE: 30.0% OF ALL WAVE
 HEIGHTS WERE IN THE RANGE
 5 - 6 FEET.
 N = OBSERVATION COUNT.

WAVE DATA FOR THESE TABLES
 WERE SELECTED FROM THE HIGHER
 OF SEA OR SWELL WHEN BOTH
 WERE REPORTED.



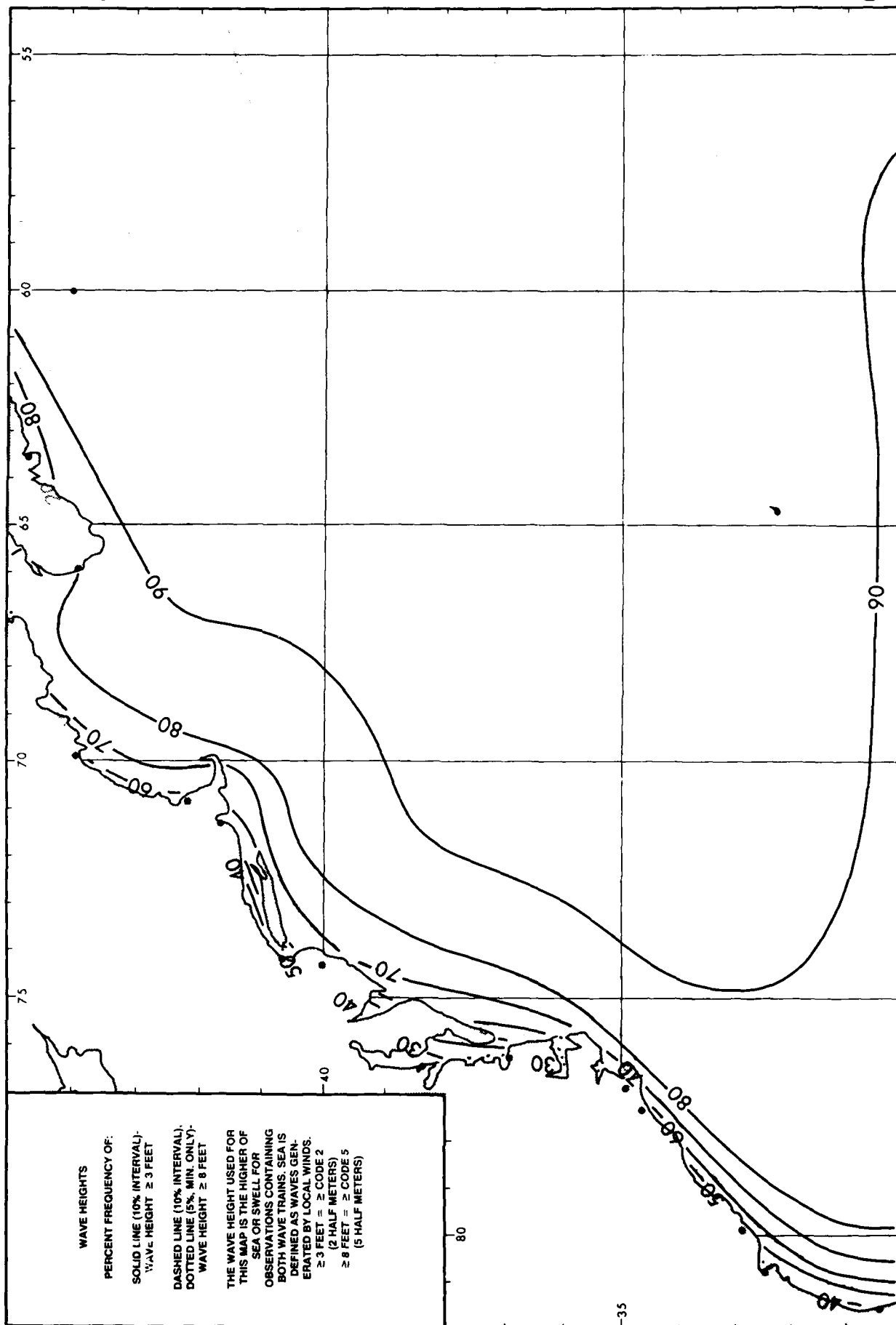
January

Wave Height

5.2	21.7	5.2	24.8	5.2	3.4	5.2	23.5	5.2	10.0	5.2	1.3	5.2	6.0	5.2	3.9	5.2	4.5	5.2	2.9	5.2	4.1	5.2	5.0	5.2	6.5	5.2	6.1
3.4	4.3	3.4	23.8	3.4	18.2	3.4	13.7	3.4	16.1	3.4	20.3	3.4	15.9	3.4	15.3	3.4	16.8	3.4	10.9	3.4	12.8	3.4	8.6	3.4	8.0	3.4	10.5
5.6	6.7	5.6	14.0	5.6	18.2	5.6	17.6	5.6	21.7	5.6	18.3	5.6	18.1	5.6	19.2	5.6	14.8	5.6	15.7	5.6	15.5	5.6	17.2	5.6	16.4	5.6	9.4
7.9	39.1	7.9	30.5	7.9	27.3	7.9	29.1	7.9	33.5	7.9	28.8	7.9	31.6	7.9	31.6	7.9	31.5	7.9	32.0	7.9	30.7	7.9	30.7	7.9	28.6	7.9	32.0
10-12	21.7	10-12	5.7	10-12	0.0	10-12	11.9	10-12	10.0	10-12	12.8	10-12	17.3	10-12	16.7	10-12	15.6	10-12	18.2	10-12	17.4	10-12	15.3	10-12	18.9	10-12	19.1
#13	4.3	#13	1.2	#13	0.0	#13	5.9	#13	8.3	#13	7.5	#13	11.1	#13	13.3	#13	16.7	#13	19.3	#13	19.5	#13	23.0	#13	19.7	#13	22.3
N=	23	N=	400	N=	11	N=	51	N=	939	N=	399	N=	45	N=	42	N=	208	N=	495	N=	563	N=	261	N=	273	N=	296
5.2	11.8	5.2	16.4	5.2	10.3	5.2	10.8	5.2	9.4	5.2	10.3	5.2	7.3	5.2	4.0	5.2	5.3	5.2	7.9	5.2	7.0	5.2	3.8	5.2	5.7	5.2	9.2
3.4	22.8	3.4	19.9	3.4	17.9	3.4	17.9	3.4	20.5	3.4	16.5	3.4	15.4	3.4	9.8	3.4	14.0	3.4	12.3	3.4	14.0	3.4	11.1	3.4	13.7	3.4	4.5
5.6	14.2	5.6	20.8	5.6	18.2	5.6	19.0	5.6	16.6	5.6	14.1	5.6	20.2	5.6	15.3	5.6	16.0	5.6	15.0	5.6	16.7	5.6	13.0	5.6	10.4	5.6	14.5
7.9	25.2	7.9	29.2	7.9	21.9	7.9	26.3	7.9	26.8	7.9	25.6	7.9	28.7	7.9	36.1	7.9	34.5	7.9	26.1	7.9	24.9	7.9	29.3	7.9	25.4	7.9	27.5
10-12	18.1	10-12	10.2	10-12	14.0	10-12	15.8	10-12	15.4	10-12	18.8	10-12	16.6	10-12	16.5	10-12	16.7	10-12	15.8	10-12	19.1	10-12	21.6	10-12	19.4	10-12	20.1
#13	7.9	#13	3.5	#13	7.7	#13	10.2	#13	11.3	#13	14.7	#13	11.8	#13	18.2	#13	13.7	#13	22.9	#13	18.3	#13	21.2	#13	21.3	#13	24.5
N=	127	N=	244	N=	351	N=	520	N=	512	N=	496	N=	331	N=	1337	N=	952	N=	341	N=	257	N=	208	N=	211	N=	290
5.2	16.0	5.2	6.2	5.2	9.9	5.2	9.1	5.2	6.1	5.2	6.7	5.2	8.5	5.2	6.2	5.2	6.1	5.2	4.6	5.2	3.8	5.2	3.3	5.2	3.6	5.2	2.1
3.4	20.2	3.4	16.6	3.4	20.7	3.4	17.3	3.4	13.6	3.4	14.4	3.4	15.9	3.4	12.4	3.4	18.8	3.4	11.2	3.4	9.9	3.4	15.4	3.4	9.8	3.4	12.1
5.6	18.6	5.6	18.9	5.6	16.9	5.6	16.6	5.6	16.6	5.6	19.9	5.6	15.9	5.6	15.0	5.6	16.5	5.6	13.1	5.6	13.1	5.6	15.1	5.6	13.7	5.6	14.1
7.9	24.8	7.9	29.6	7.9	29.6	7.9	27.3	7.9	28.2	7.9	24.1	7.9	26.7	7.9	29.9	7.9	27.3	7.9	29.7	7.9	26.6	7.9	28.3	7.9	24.7	7.9	30.1
10-12	12.7	10-12	17.2	10-12	13.8	10-12	16.8	10-12	15.8	10-12	17.2	10-12	14.4	10-12	13.5	10-12	13.2	10-12	15.8	10-12	20.8	10-12	15.4	10-12	18.2	10-12	18.1
#13	7.8	#13	11.5	#13	9.1	#13	14.2	#13	19.6	#13	15.7	#13	18.6	#13	23.0	#13	18.2	#13	25.5	#13	25.6	#13	22.4	#13	30.1	#13	15.2
N=	307	N=	338	N=	658	N=	352	N=	830	N=	402	N=	585	N=	274	N=	462	N=	259	N=	293	N=	272	N=	336	N=	341
5.2	10.4	5.2	9.4	5.2	9.9	5.2	9.2	5.2	4.5	5.2	11.9	5.2	7.4	5.2	6.8	5.2	5.4	5.2	5.1	5.2	4.5	5.2	4.2	5.2	4.2	5.2	3.1
3.4	20.4	3.4	16.2	3.4	14.9	3.4	12.1	3.4	12.7	3.4	17.3	3.4	18.2	3.4	11.8	3.4	9.7	3.4	10.3	3.4	10.6	3.4	8.2	3.4	10.4	3.4	6.4
5.6	19.9	5.6	18.4	5.6	17.4	5.6	18.2	5.6	16.2	5.6	14.5	5.6	16.9	5.6	16.5	5.6	16.2	5.6	15.0	5.6	15.3	5.6	12.8	5.6	14.2	5.6	12.9
7.9	26.5	7.9	27.6	7.9	29.1	7.9	26.4	7.9	28.5	7.9	25.2	7.9	27.5	7.9	27.8	7.9	28.8	7.9	28.1	7.9	25.2	7.9	27.6	7.9	27.9	7.9	26.3
10-12	13.1	10-12	17.8	10-12	15.8	10-12	17.0	10-12	16.4	10-12	16.1	10-12	15.5	10-12	18.3	10-12	17.5	10-12	18.5	10-12	23.2	10-12	21.0	10-12	17.5	10-12	21.9
#13	9.7	#13	10.5	#13	12.9	#13	17.2	#13	21.8	#13	15.0	#13	14.6	#13	18.8	#13	22.3	#13	23.0	#13	21.2	#13	21.0	#13	25.9	#13	24.5
N=	412	N=	673	N=	495	N=	512	N=	513	N=	620	N=	699	N=	442	N=	462	N=	487	N=	444	N=	463	N=	462	N=	112
5.2	10.3	5.2	8.5	5.2	8.9	5.2	9.6	5.2	7.1	5.2	5.8	5.2	4.1	5.2	4.5	5.2	5.3	5.2	4.5	5.2	3.2	5.2	2.2	5.2	3.9	5.2	3.9
3.4	17.4	3.4	16.8	3.4	15.6	3.4	14.3	3.4	14.4	3.4	10.4	3.4	10.5	3.4	10.7	3.4	7.5	3.4	5.4	3.4	7.9	3.4	9.2	3.4	5.6	3.4	5.6
5.6	17.1	5.6	17.7	5.6	17.9	5.6	15.1	5.6	16.5	5.6	14.6	5.6	11.5	5.6	12.1	5.6	14.3	5.6	14.3	5.6	12.6	5.6	12.4	5.6	12.3	5.6	10.6
7.9	9.1	7.9	26.1	7.9	25.1	7.9	29.5	7.9	26.5	7.9	29.2	7.9	27.9	7.9	29.8	7.9	25.6	7.9	30.1	7.9	29.1	7.9	29.0	7.9	31.7	7.9	26.3
10-12	12.3	10-12	15.2	10-12	14.1	10-12	14.6	10-12	16.1	10-12	18.1	10-12	20.1	10-12	17.4	10-12	20.1	10-12	20.3	10-12	18.6	10-12	21.1	10-12	20.6	10-12	26.1
#13	13.8	#13	15.7	#13	18.3	#13	16.9	#13	19.2	#13	21.6	#13	25.1	#13	25.5	#13	27.1	#13	25.3	#13	28.5	#13	26.1	#13	25.9	#13	25.6
N=	1047	N=	797	N=	704	N=	603	N=	807	N=	568	N=	459	N=	447	N=	468	N=	462	N=	467	N=	445	N=	432	N=	360
5.2	7.3	5.2	7.9	5.2	5.2	5.2	4.4	5.2	4.3	5.2	4.2	5.2	3.3	5.2	4.2	5.2	5.2	5.2	3.0	5.2	3.4	5.2	3.6	5.2	1.6	5.2	1.8
3.4	13.4	3.4	13.4	3.4	13.0	3.4	13.8	3.4	9.2	3.4	6.7	3.4	9.1	3.4	9.3	3.4	8.5	3.4	6.8	3.4	5.9	3.4	5.9	3.4	4.5	3.4	6.9
5.6	18.8	5.6	14.0	5.6	15.3	5.6	17.6	5.6	13.4	5.6	12.9	5.6	13.9	5.6	11.9	5.6	12.2	5.6	10.6	5.6	10.5	5.6	10.4	5.6	6.1	5.6	9.6
7.9	27.5	7.9	23.8	7.9	27.5	7.9	27.5	7.9	30.6	7.9	30.4	7.9	24.8	7.9	22.9	7.9	26.1	7.9	25.2	7.9	27.2	7.9	27.2	7.9	32.8	7.9	30.4
10-12	15.1	10-12	18.4	10-12	17.1	10-12	16.6	10-12	18.9	10-12	26.9	10-12	21.7	10-12	22.5	10-12	20.5	10-12	19.6	10-12	18.1	10-12	17.5	10-12	19.7	10-12	19.7
#13	17.9	#13	22.5	#13	22.0	#13	19.1	#13	27.6	#13	24.4	#13	27.2	#13	29.2	#13	27.4	#13	34.7	#13	31.0	#13	35.5	#13	31.3	#13	1.6
N=	357	N=	365	N=	386	N=	477	N=	509	N=	457	N=	460	N=	472	N=	462	N=	369	N=	323	N=	338	N=	334	N=	335
5.2	7.6	5.2	6.2	5.2	6.9	5.2	5.1	5.2	4.2	5.2	3.6	5.2	3.7	5.2	2.5	5.2	3.5	5.2	2.6	5.2	0.3	5.2	2.8	5.2	1.4	5.2	1.1
3.4	12.5	3.4	10.3	3.4	16.7	3.4	19.6	3.4	9.4	3.4	8.6	3.4	10.2	3.4	6.3	3.4	4.8	3.4	6.0	3.4	5.8	3.4	5.2	3.4	4.8	3.4	4.1
5.6	15.1	5.6	11.5	5.6	17.6	5.6	16.1	5.6	11.8	5.6	12.0	5.6	10.5	5.6	12.0	5.6	8.7	5.6	11.4	5.6	10.2	5.6	10.2	5.6	11.0	5.6	10.7
7.9	30.6	7.9	30.4	7.9	28.6	7.9	26.6	7.9	28.6	7.9	28.6	7.9	27.9	7.9	32.1	7.9	33.4	7.9	25.5	7.9	25.3	7.9	26.5	7.9	25.5	7.9	27.9
10-12	14.9	10-12	20.3	10-12	17.4	10-12	17.5	10-12	24.6	10-12	20.6	10-12	20.7	10-12	22.1	10-12	16.8	10-12	20.9	10-12	28.6	10-12	24.7	10-12	23.4	10-12	21.1
#13	16.1	#13	21.3	#13	14.8	#13	14.5	#13	22.7	#13	25.5	#13	25.1	#13	34.1	#13	32.3	#13	33.3	#13	31.6	#13	31.4	#13	37.8	#13	32.1
N=	409	N=	418	N=	432	N=	406	N=	359	N=	271	N=	371	N=	371	N=	370	N=	302	N=	308	N=	326	N=	290	N=	265
5.2	3.8	5.2	7.9	5.2	5.2	5.2	3.7	5.2	3.3	5.2	2.9	5.2	1.0	5.2	2.2	5.2	1.1	5.2	1.5	5.2	2.3	5.2	2.3	5.2	3.2	5.2	3.3
3.4	12.4	3.4	11.5	3.4	11.4	3.4	9.9	3.4	10.4	3.4	8.3	3.4	8.3	3.4	10.0	3.4	5.4	3.4	6.6	3.4	5.7	3.4	5.3	3.4	4.6	3.4	4.1
5.6	13.6	5.6	12.3	5.6	13.9	5.6	12.5	5.6	12.5	5.6	11.0	5.6	11.0	5.6	10.9	5.6	10.5	5.6	9.7	5.6	10.7	5.6	10.6	5.6	10.6	5.6	10.7
7.9	27.1	7.9	29.9	7.9	27.9	7.9	27.2	7.9</																			

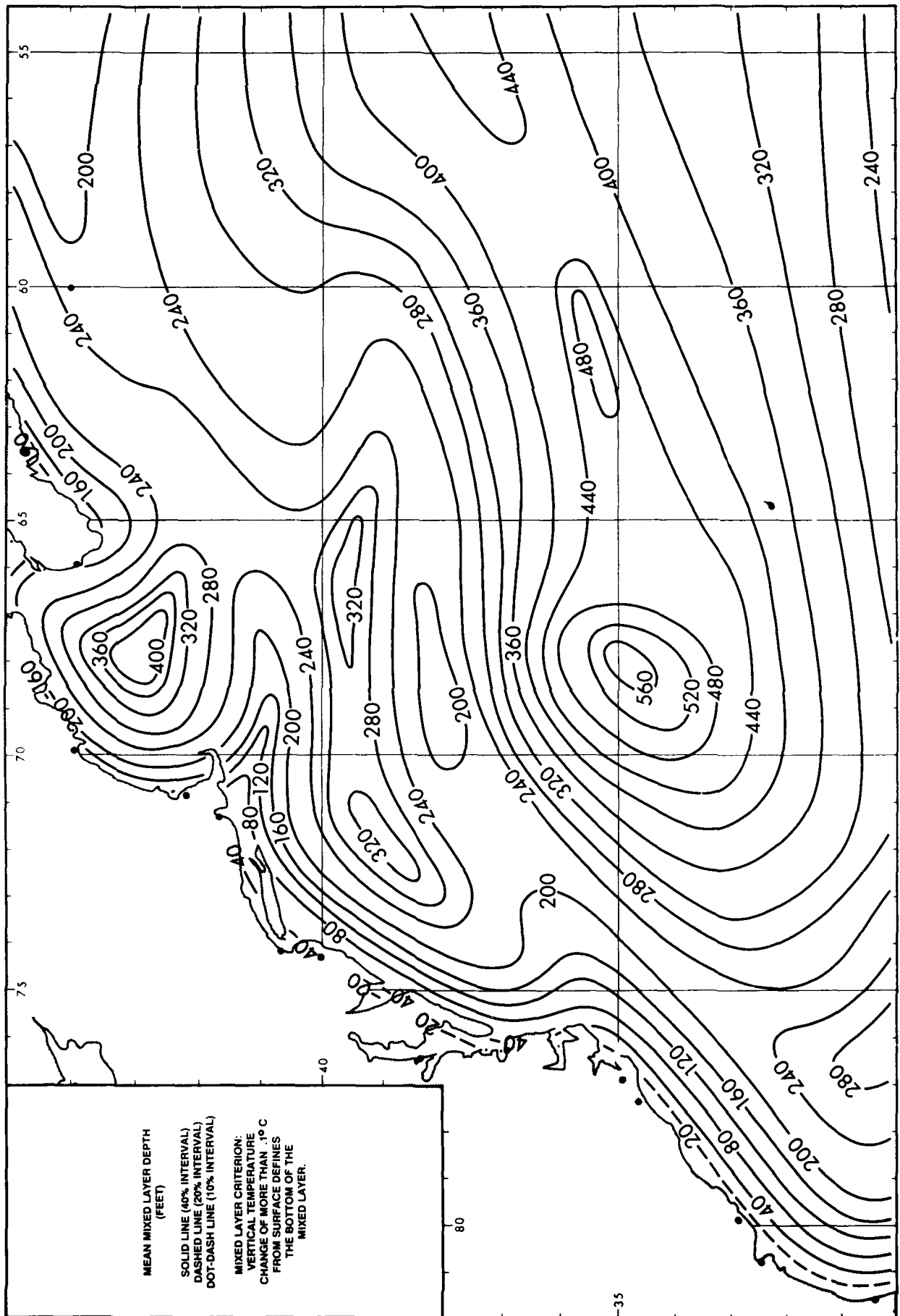
January

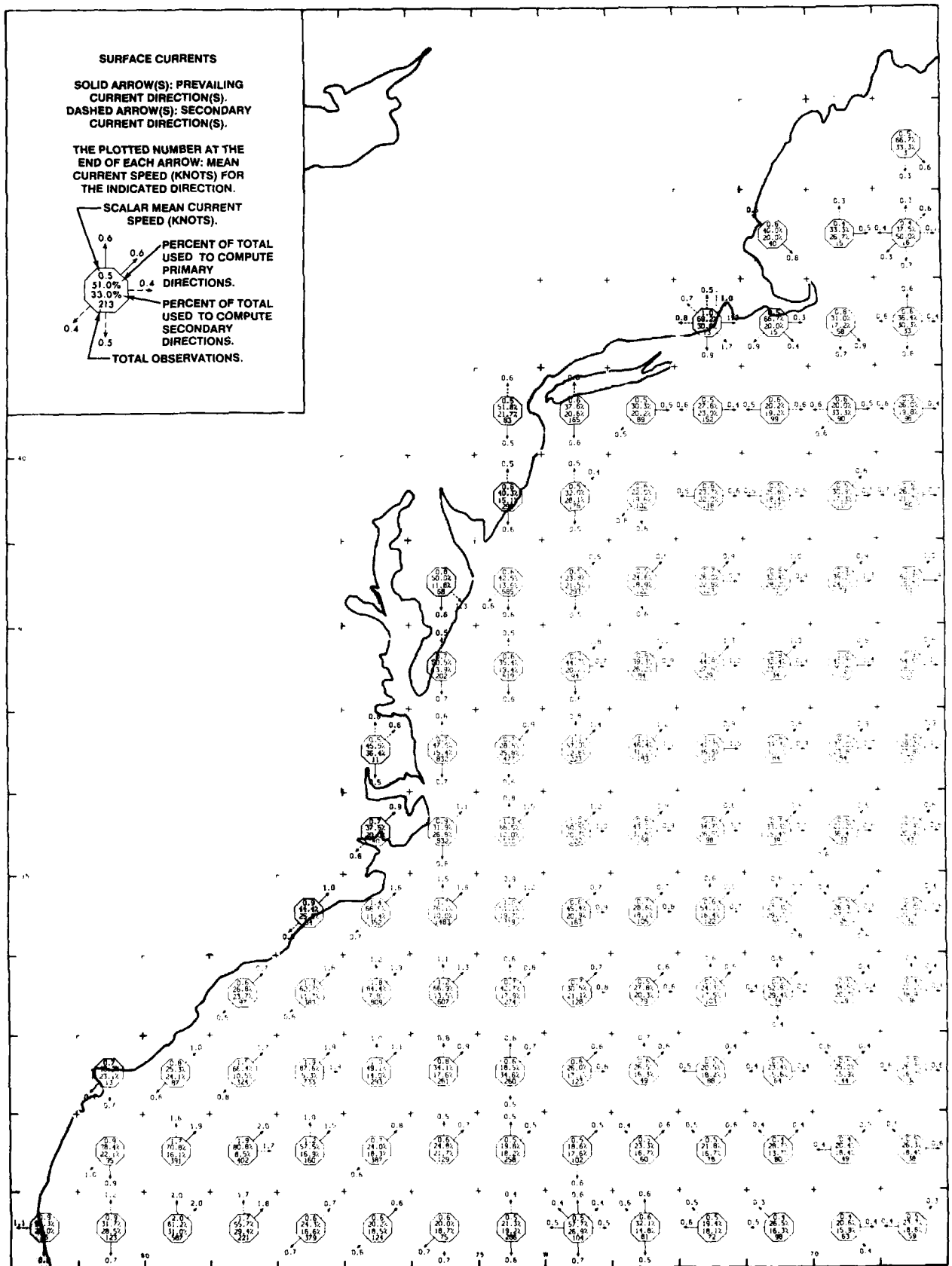
Wave Height

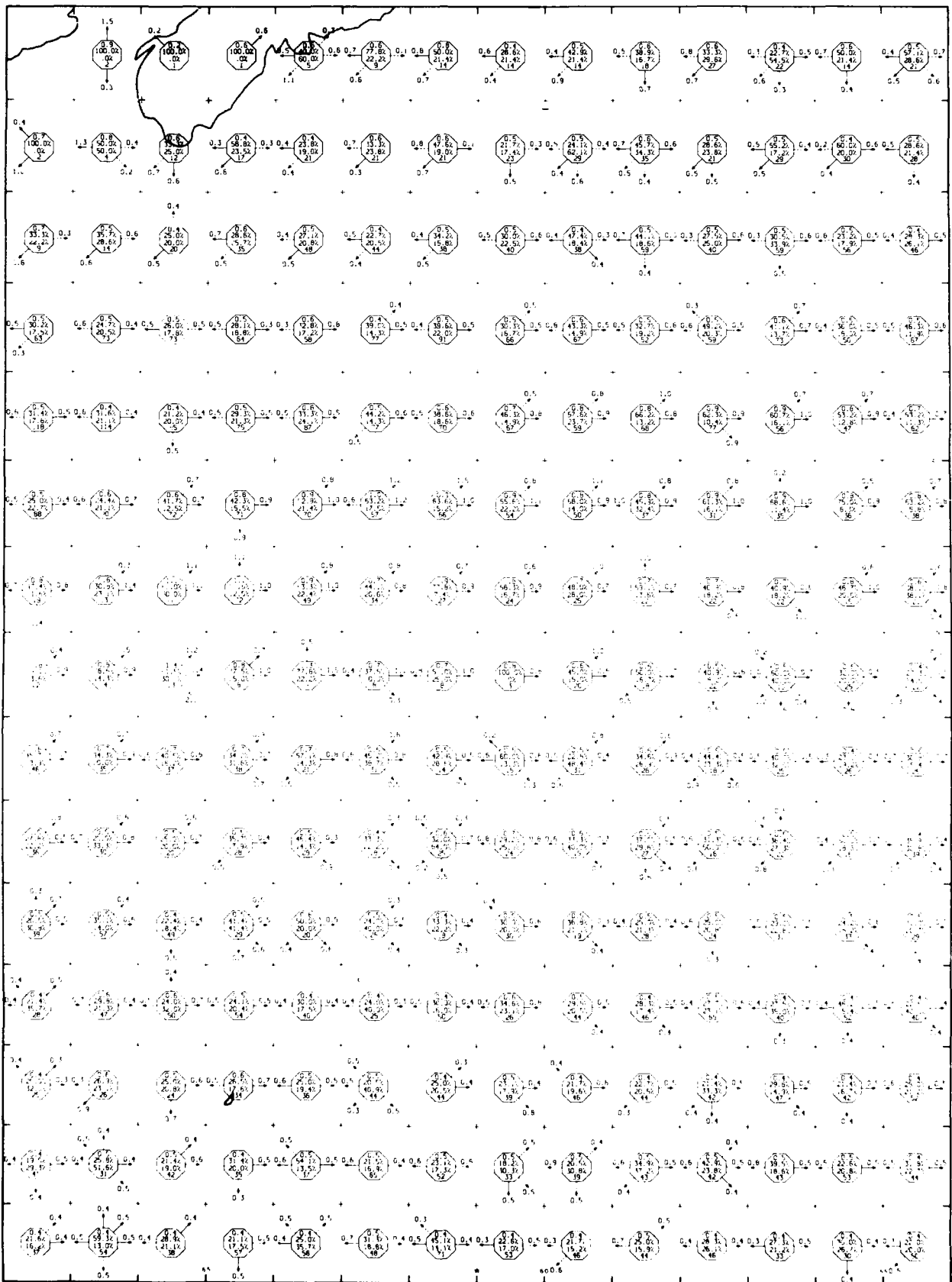


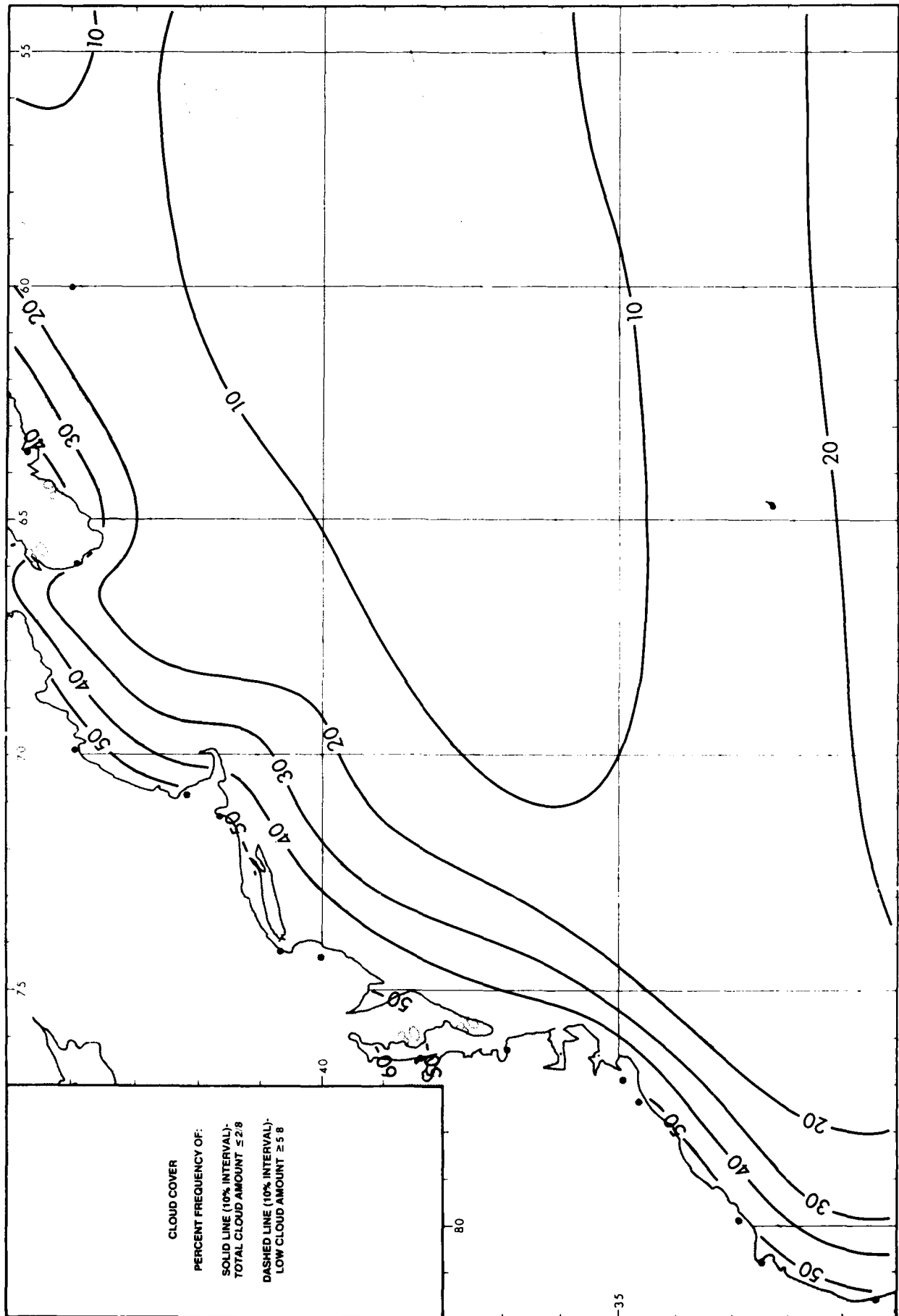
January

Mean Mixed Layer Depth



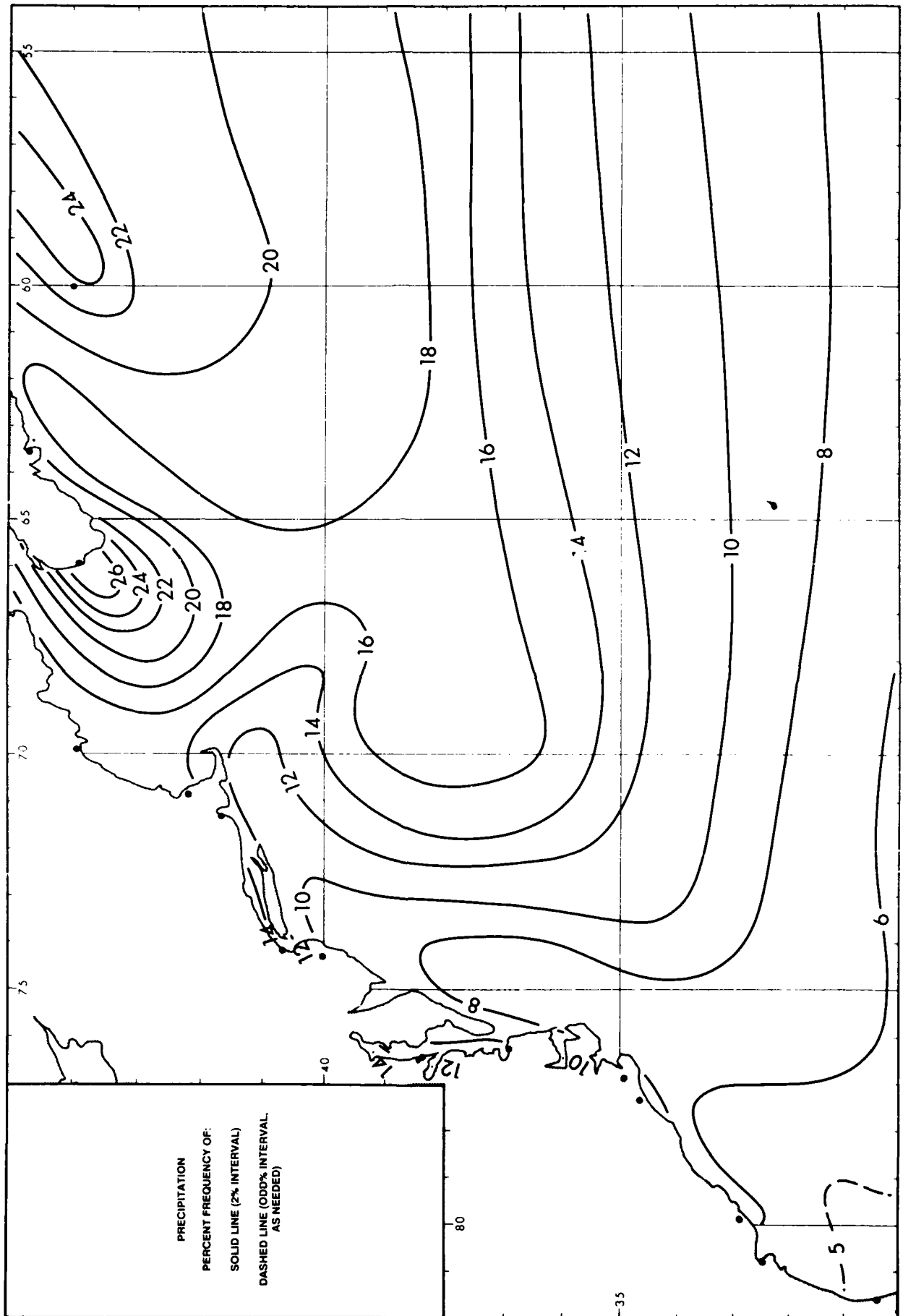


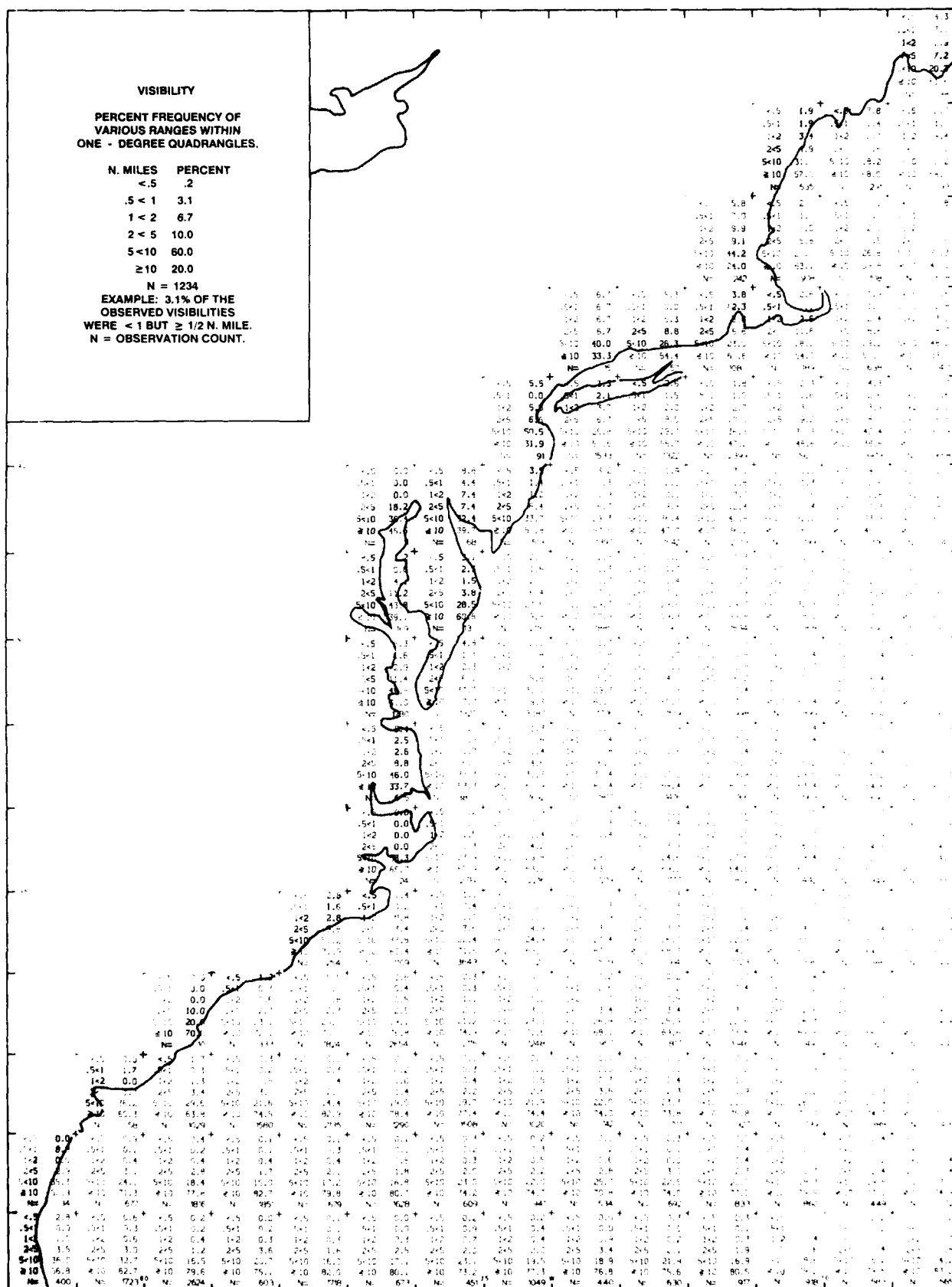




February

Precipitation





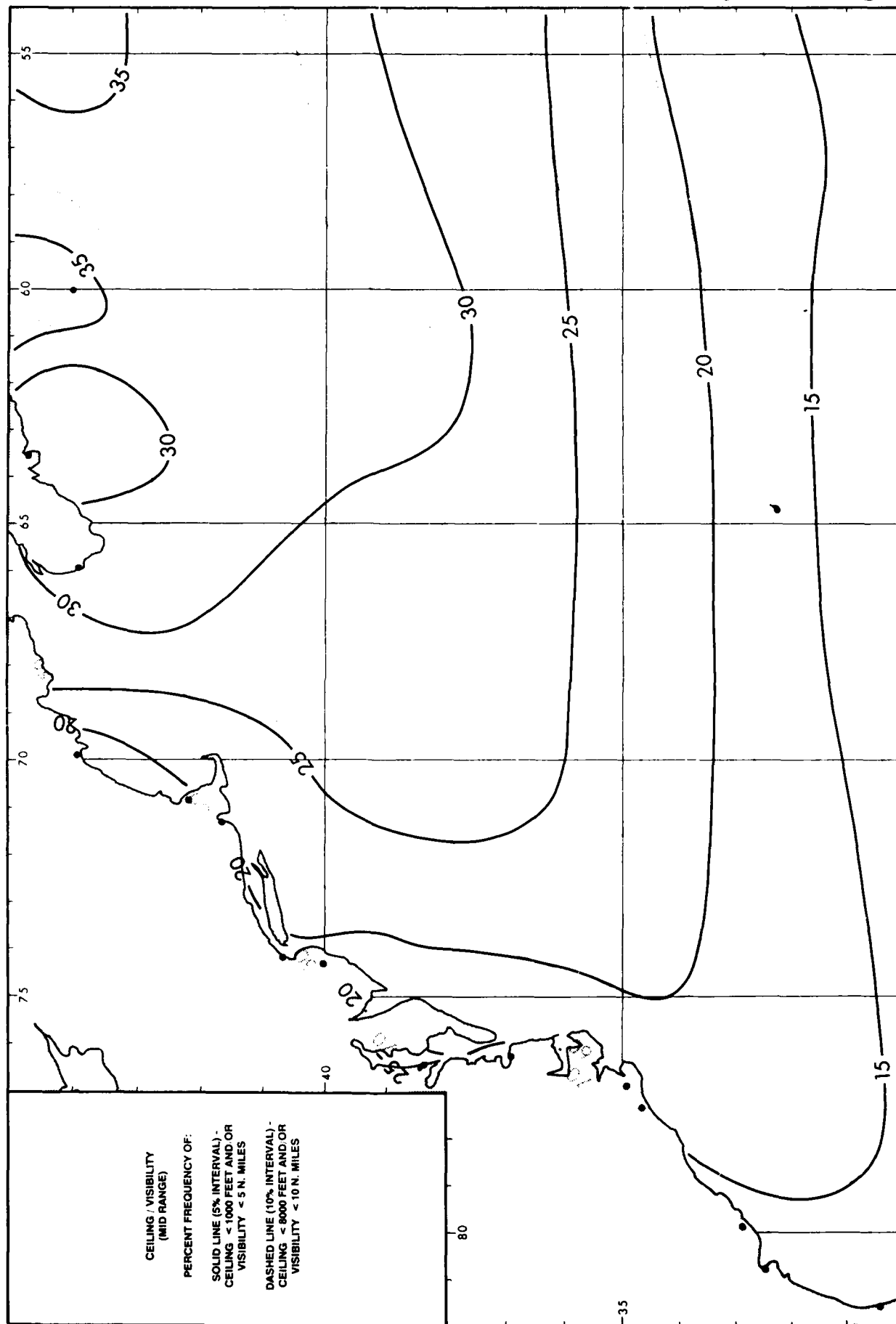
February

Visibility

1-1	3.7	4.1	4.4	4.7	5.0	5.3	5.6	5.9	6.2	6.5	6.8	7.1	7.4	7.7	8.0	8.3	8.6	8.9	9.2	9.5	9.8	10.1	10.4	10.7	11.0	11.3	11.6	11.9	12.2	12.5	12.8	13.1	13.4	13.7	14.0	14.3	14.6	14.9	15.2	15.5	15.8	16.1	16.4	16.7	17.0	17.3	17.6	17.9	18.2	18.5	18.8	19.1	19.4	19.7	20.0	20.3	20.6	20.9	21.2	21.5	21.8	22.1	22.4	22.7	23.0	23.3	23.6	23.9	24.2	24.5	24.8	25.1	25.4	25.7	26.0	26.3	26.6	26.9	27.2	27.5	27.8	28.1	28.4	28.7	29.0	29.3	29.6	29.9	30.2	30.5	30.8	31.1	31.4	31.7	32.0	32.3	32.6	32.9	33.2	33.5	33.8	34.1	34.4	34.7	35.0	35.3	35.6	35.9	36.2	36.5	36.8	37.1	37.4	37.7	38.0	38.3	38.6	38.9	39.2	39.5	39.8	40.1	40.4	40.7	41.0	41.3	41.6	41.9	42.2	42.5	42.8	43.1	43.4	43.7	44.0	44.3	44.6	44.9	45.2	45.5	45.8	46.1	46.4	46.7	47.0	47.3	47.6	47.9	48.2	48.5	48.8	49.1	49.4	49.7	50.0	50.3	50.6	50.9	51.2	51.5	51.8	52.1	52.4	52.7	53.0	53.3	53.6	53.9	54.2	54.5	54.8	55.1	55.4	55.7	56.0	56.3	56.6	56.9	57.2	57.5	57.8	58.1	58.4	58.7	59.0	59.3	59.6	59.9	60.2	60.5	60.8	61.1	61.4	61.7	62.0	62.3	62.6	62.9	63.2	63.5	63.8	64.1	64.4	64.7	65.0	65.3	65.6	65.9	66.2	66.5	66.8	67.1	67.4	67.7	68.0	68.3	68.6	68.9	69.2	69.5	69.8	70.1	70.4	70.7	71.0	71.3	71.6	71.9	72.2	72.5	72.8	73.1	73.4	73.7	74.0	74.3	74.6	74.9	75.2	75.5	75.8	76.1	76.4	76.7	77.0	77.3	77.6	77.9	78.2	78.5	78.8	79.1	79.4	79.7	80.0	80.3	80.6	80.9	81.2	81.5	81.8	82.1	82.4	82.7	83.0	83.3	83.6	83.9	84.2	84.5	84.8	85.1	85.4	85.7	86.0	86.3	86.6	86.9	87.2	87.5	87.8	88.1	88.4	88.7	89.0	89.3	89.6	89.9	90.2	90.5	90.8	91.1	91.4	91.7	92.0	92.3	92.6	92.9	93.2	93.5	93.8	94.1	94.4	94.7	95.0	95.3	95.6	95.9	96.2	96.5	96.8	97.1	97.4	97.7	98.0	98.3	98.6	98.9	99.2	99.5	99.8	100.1	100.4	100.7	101.0	101.3	101.6	101.9	102.2	102.5	102.8	103.1	103.4	103.7	104.0	104.3	104.6	104.9	105.2	105.5	105.8	106.1	106.4	106.7	107.0	107.3	107.6	107.9	108.2	108.5	108.8	109.1	109.4	109.7	110.0	110.3	110.6	110.9	111.2	111.5	111.8	112.1	112.4	112.7	113.0	113.3	113.6	113.9	114.2	114.5	114.8	115.1	115.4	115.7	116.0	116.3	116.6	116.9	117.2	117.5	117.8	118.1	118.4	118.7	119.0	119.3	119.6	119.9	120.2	120.5	120.8	121.1	121.4	121.7	122.0	122.3	122.6	122.9	123.2	123.5	123.8	124.1	124.4	124.7	125.0	125.3	125.6	125.9	126.2	126.5	126.8	127.1	127.4	127.7	128.0	128.3	128.6	128.9	129.2	129.5	129.8	130.1	130.4	130.7	131.0	131.3	131.6	131.9	132.2	132.5	132.8	133.1	133.4	133.7	134.0	134.3	134.6	134.9	135.2	135.5	135.8	136.1	136.4	136.7	137.0	137.3	137.6	137.9	138.2	138.5	138.8	139.1	139.4	139.7	140.0	140.3	140.6	140.9	141.2	141.5	141.8	142.1	142.4	142.7	143.0	143.3	143.6	143.9	144.2	144.5	144.8	145.1	145.4	145.7	146.0	146.3	146.6	146.9	147.2	147.5	147.8	148.1	148.4	148.7	149.0	149.3	149.6	149.9	150.2	150.5	150.8	151.1	151.4	151.7	152.0	152.3	152.6	152.9	153.2	153.5	153.8	154.1	154.4	154.7	155.0	155.3	155.6	155.9	156.2	156.5	156.8	157.1	157.4	157.7	158.0	158.3	158.6	158.9	159.2	159.5	159.8	160.1	160.4	160.7	161.0	161.3	161.6	161.9	162.2	162.5	162.8	163.1	163.4	163.7	164.0	164.3	164.6	164.9	165.2	165.5	165.8	166.1	166.4	166.7	167.0	167.3	167.6	167.9	168.2	168.5	168.8	169.1	169.4	169.7	170.0	170.3	170.6	170.9	171.2	171.5	171.8	172.1	172.4	172.7	173.0	173.3	173.6	173.9	174.2	174.5	174.8	175.1	175.4	175.7	176.0	176.3	176.6	176.9	177.2	177.5	177.8	178.1	178.4	178.7	179.0	179.3	179.6	179.9	180.2	180.5	180.8	181.1	181.4	181.7	182.0	182.3	182.6	182.9	183.2	183.5	183.8	184.1	184.4	184.7	185.0	185.3	185.6	185.9	186.2	186.5	186.8	187.1	187.4	187.7	188.0	188.3	188.6	188.9	189.2	189.5	189.8	190.1	190.4	190.7	191.0	191.3	191.6	191.9	192.2	192.5	192.8	193.1	193.4	193.7	194.0	194.3	194.6	194.9	195.2	195.5	195.8	196.1	196.4	196.7	197.0	197.3	197.6	197.9	198.2	198.5	198.8	199.1	199.4	199.7	200.0
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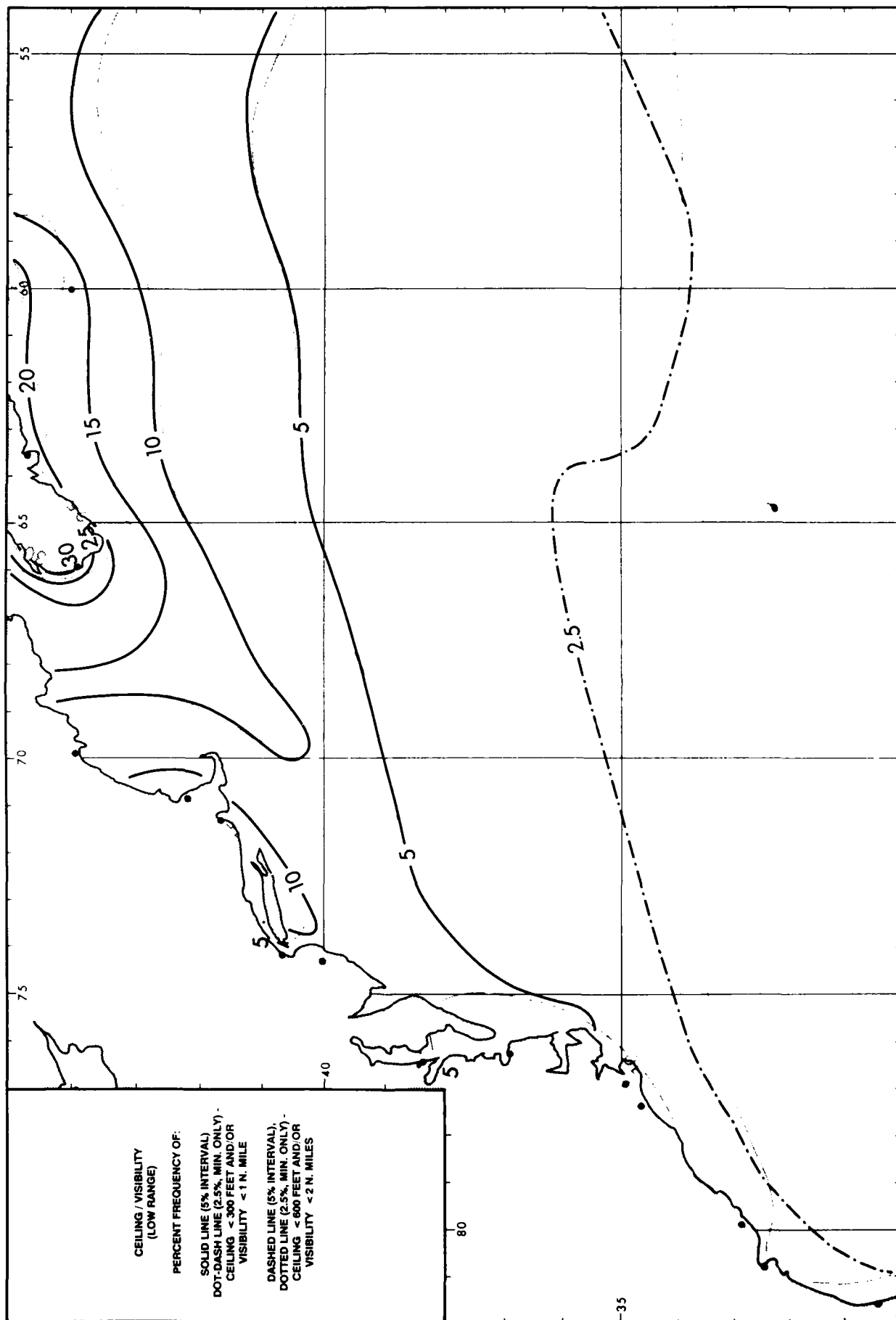
February

Ceiling / Visibility (Mid Range)



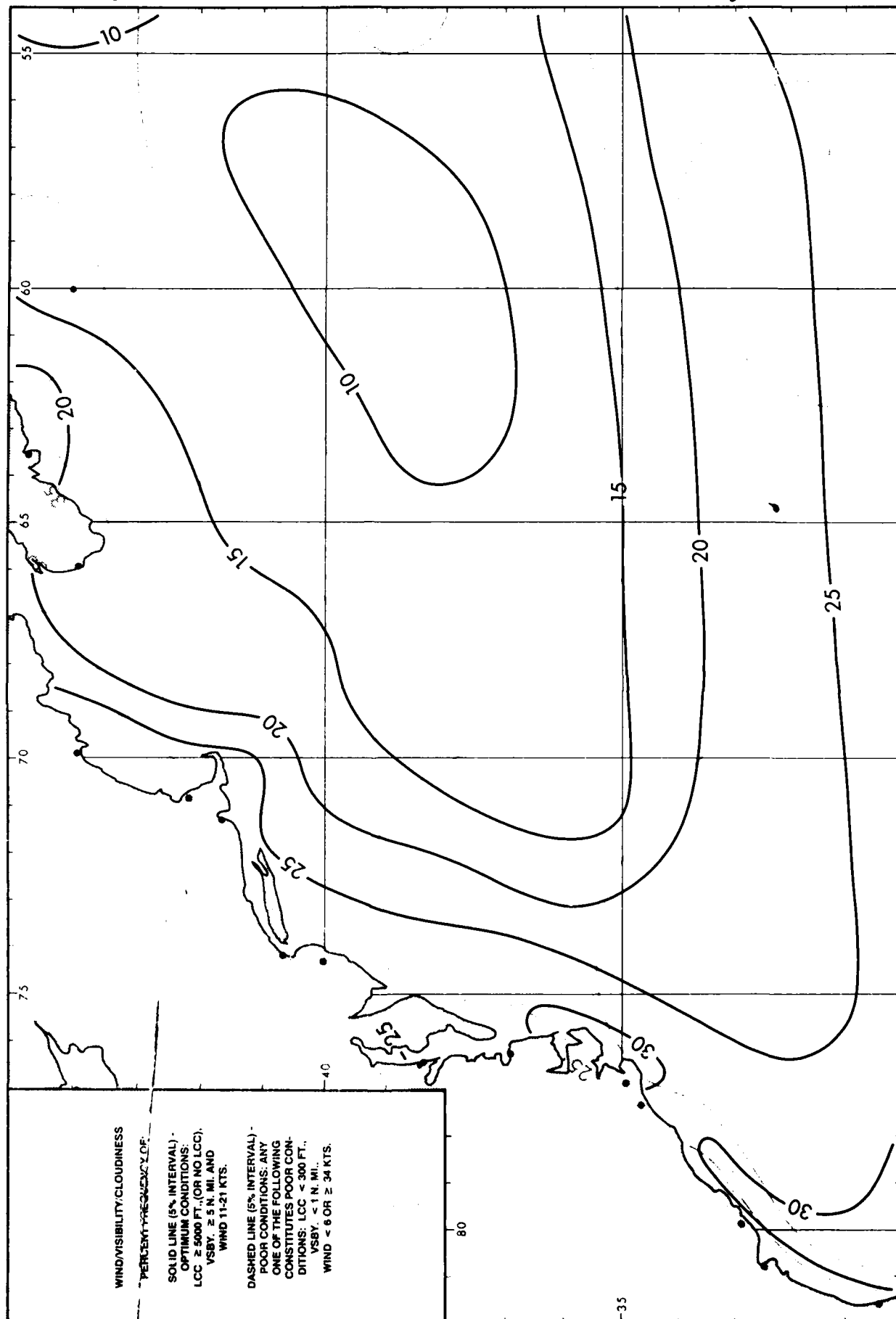
February

Ceiling / Visibility (Low Range)



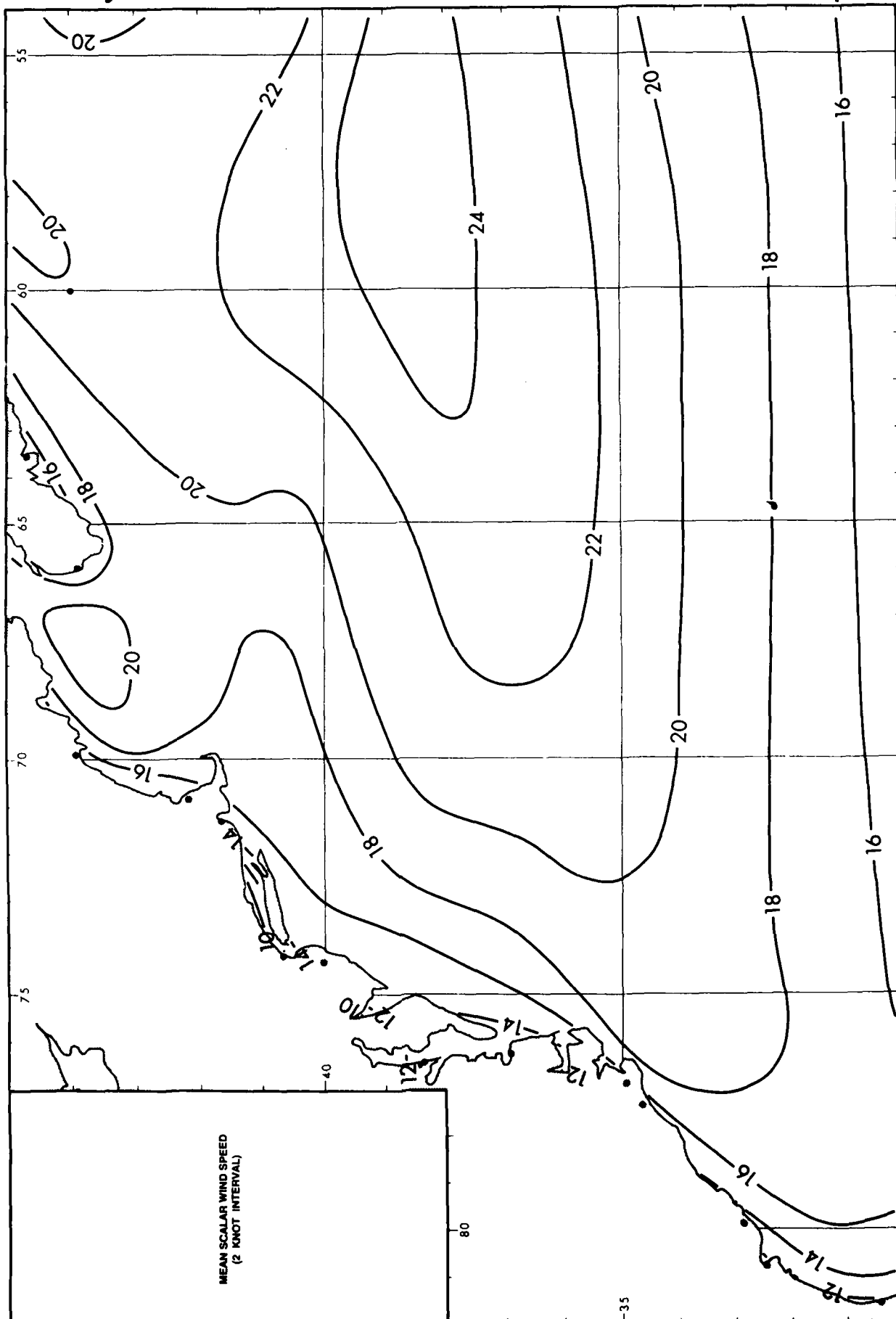
February

Wind / Visibility / Cloudiness



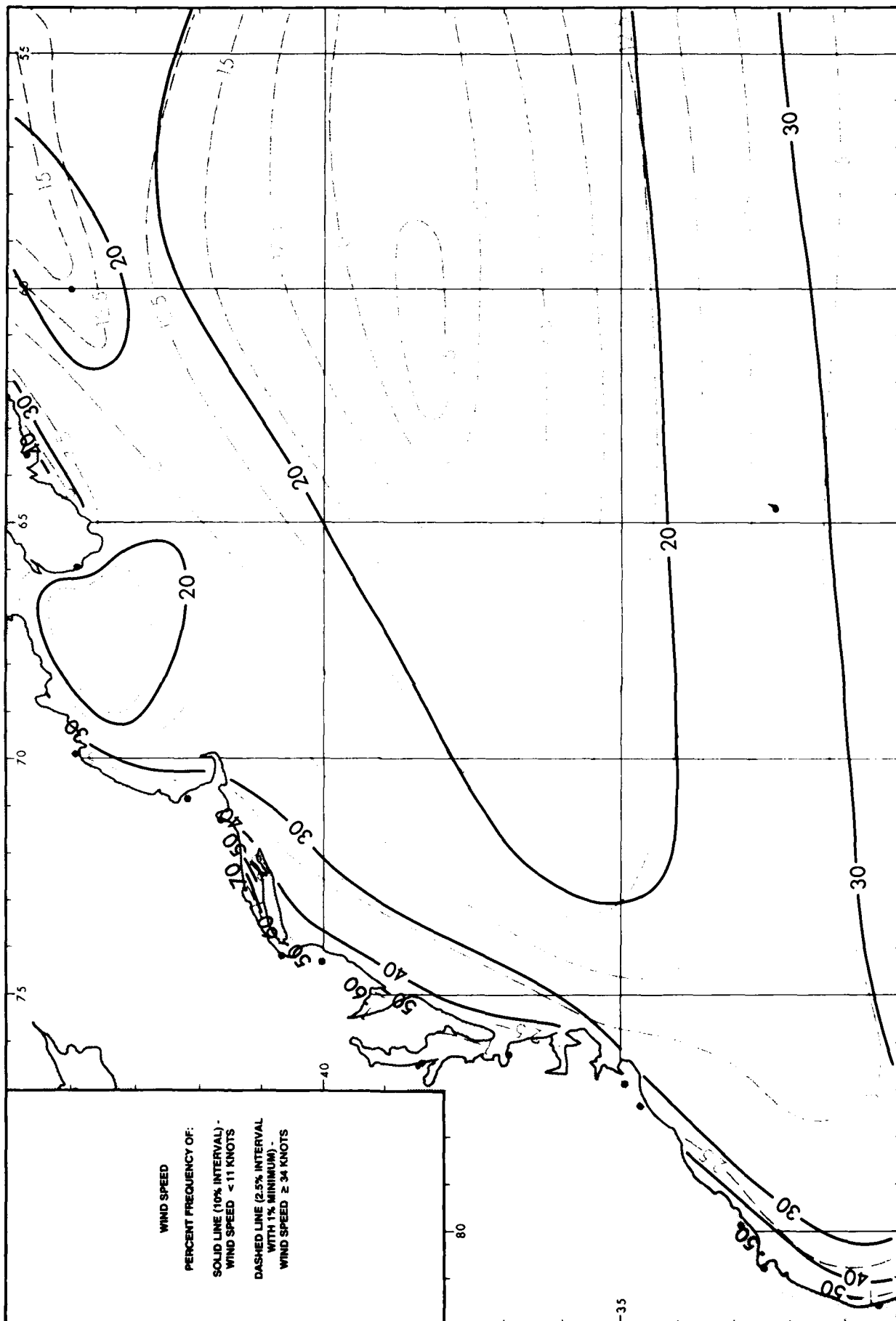
February

Mean Scalar Wind Speed



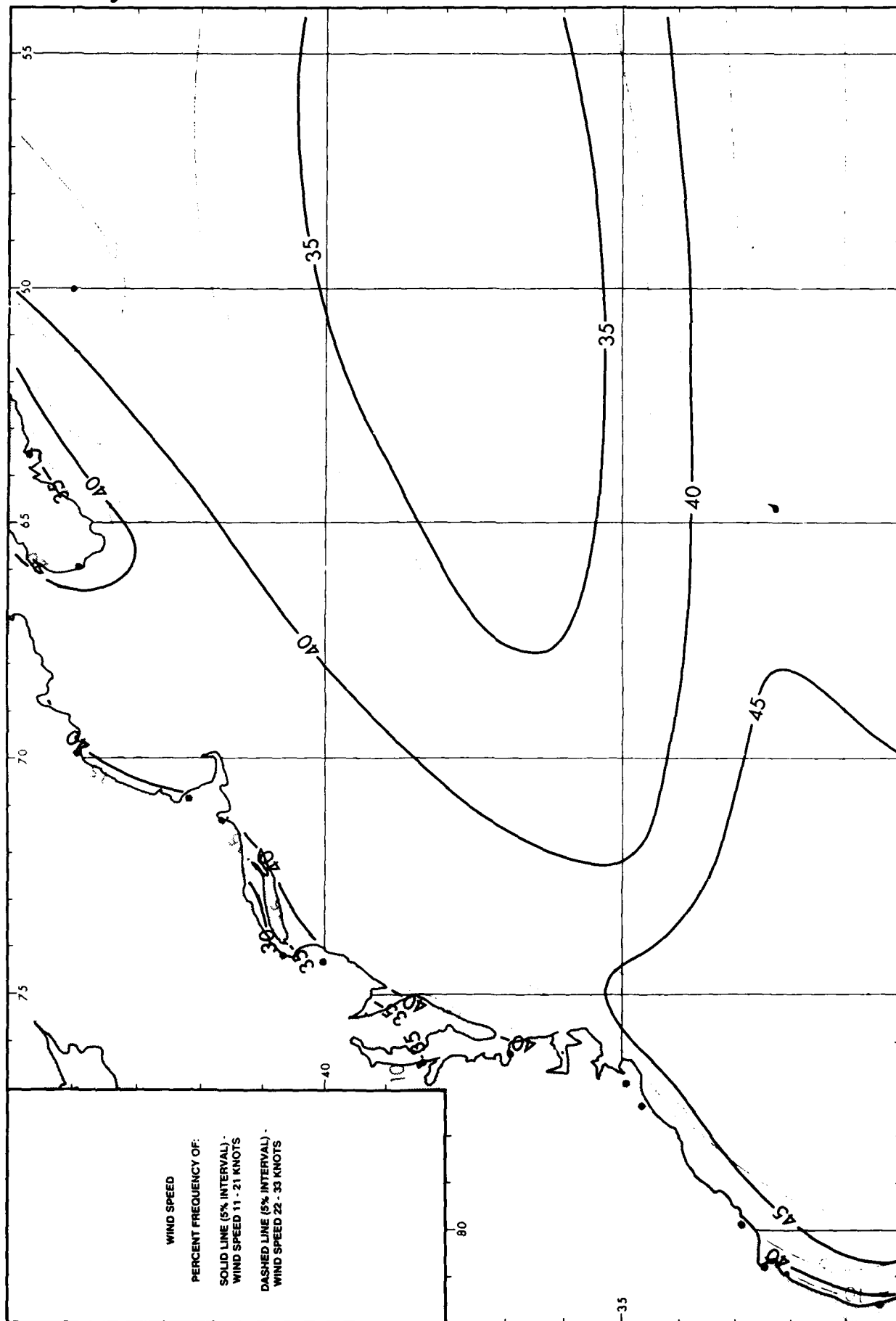
February

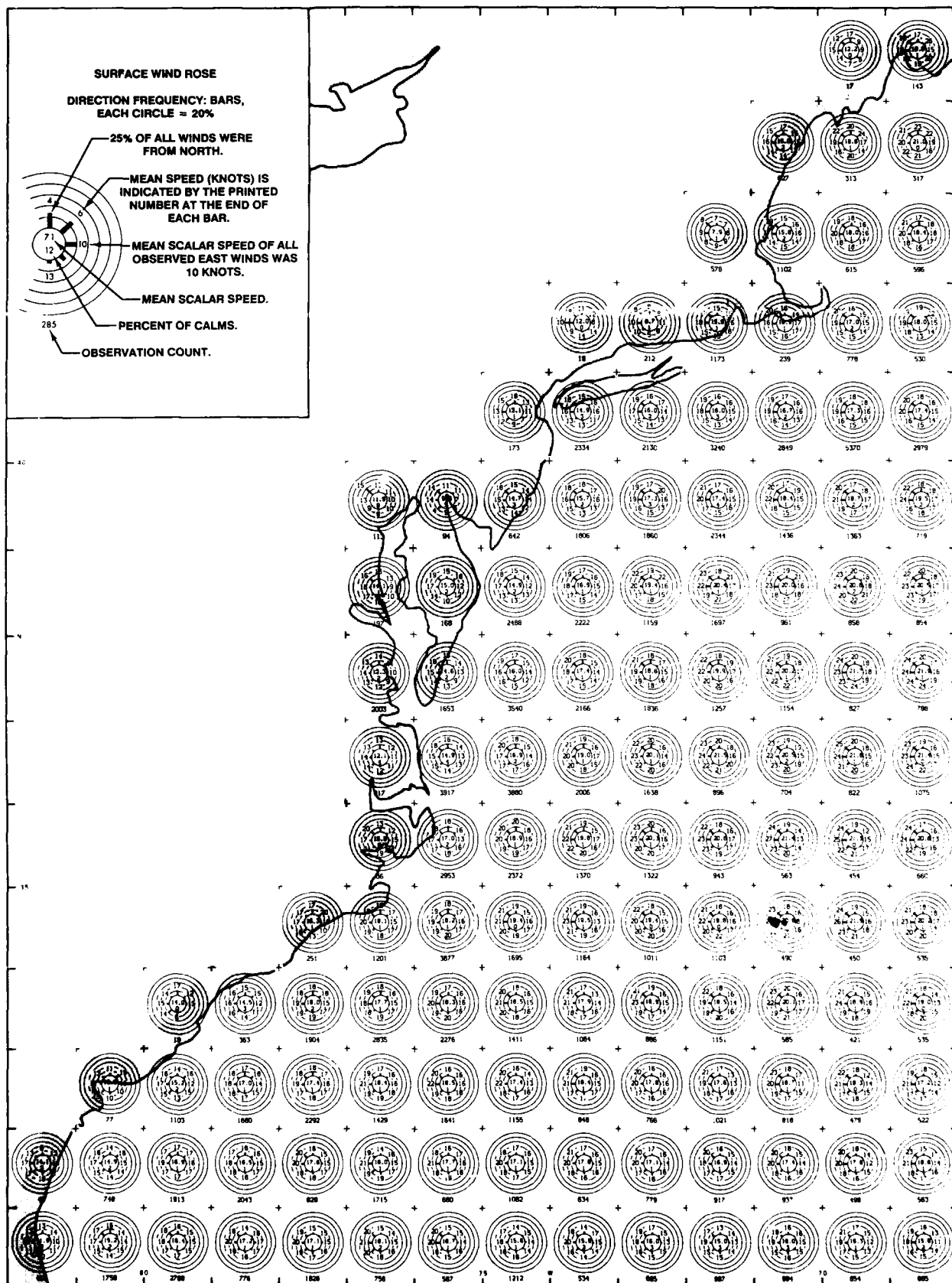
Wind Speed <11 and ≥ 34 Knots

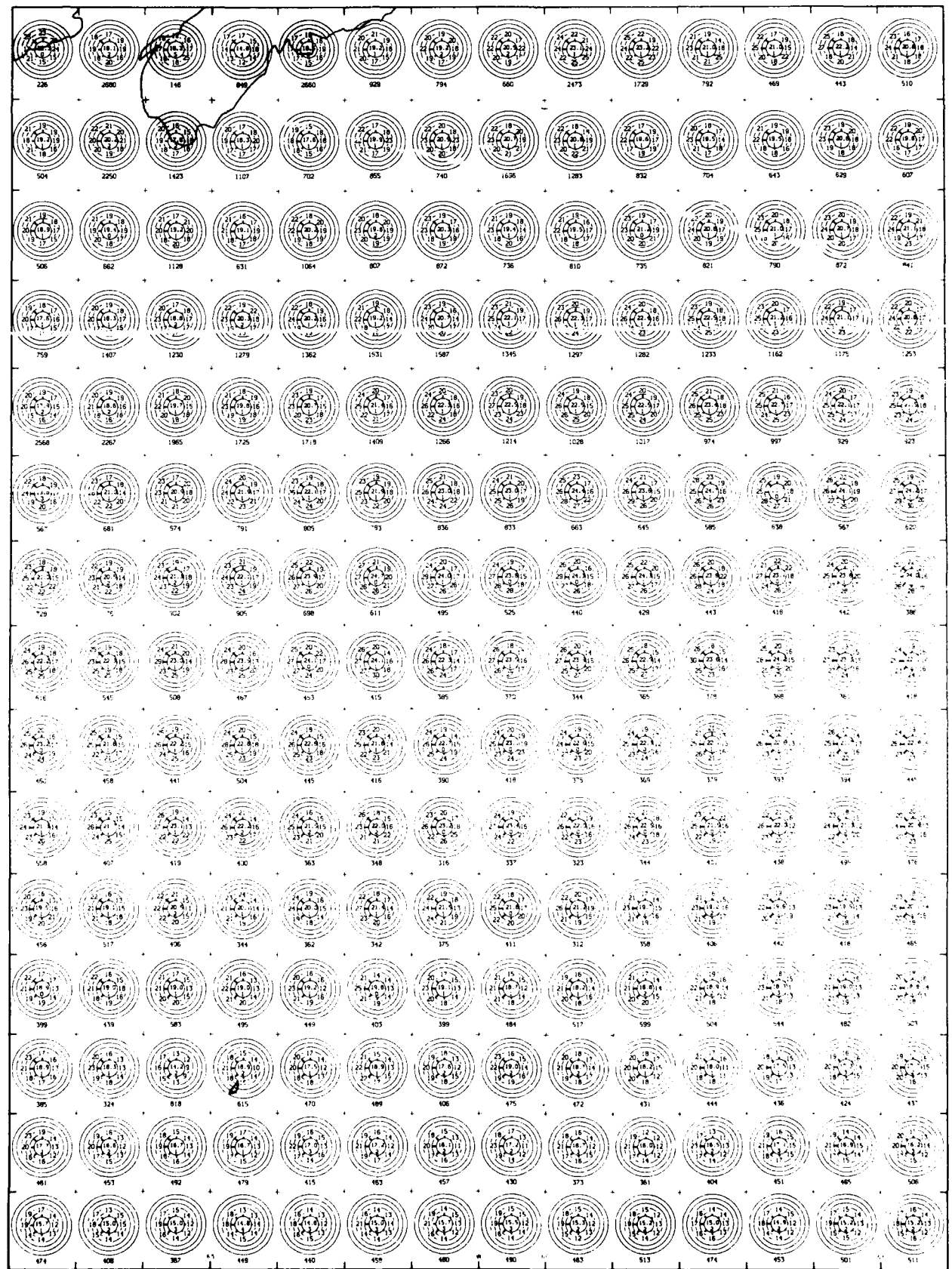


February

Wind Speed 11 - 21 and 22 - 33 Knots

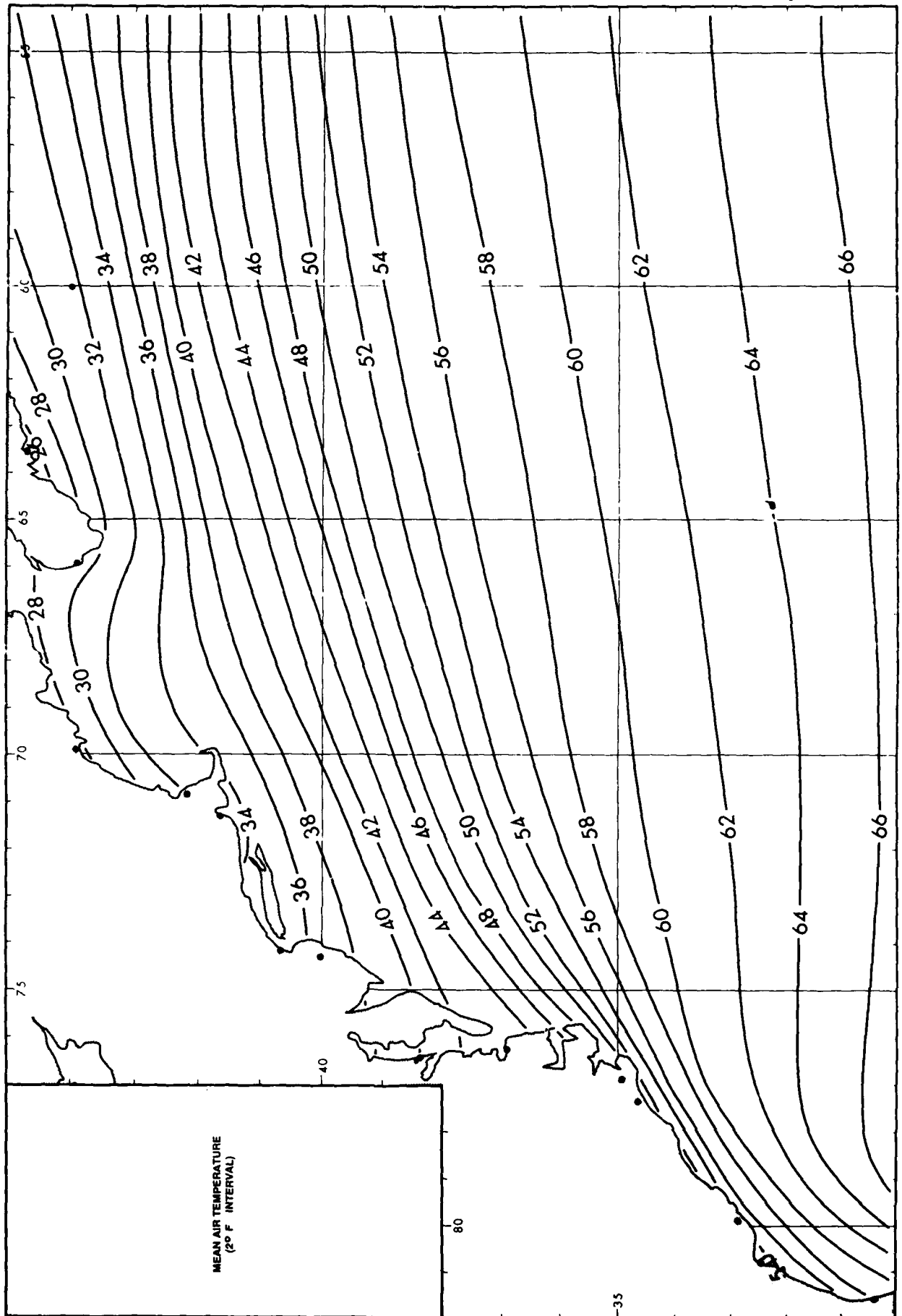






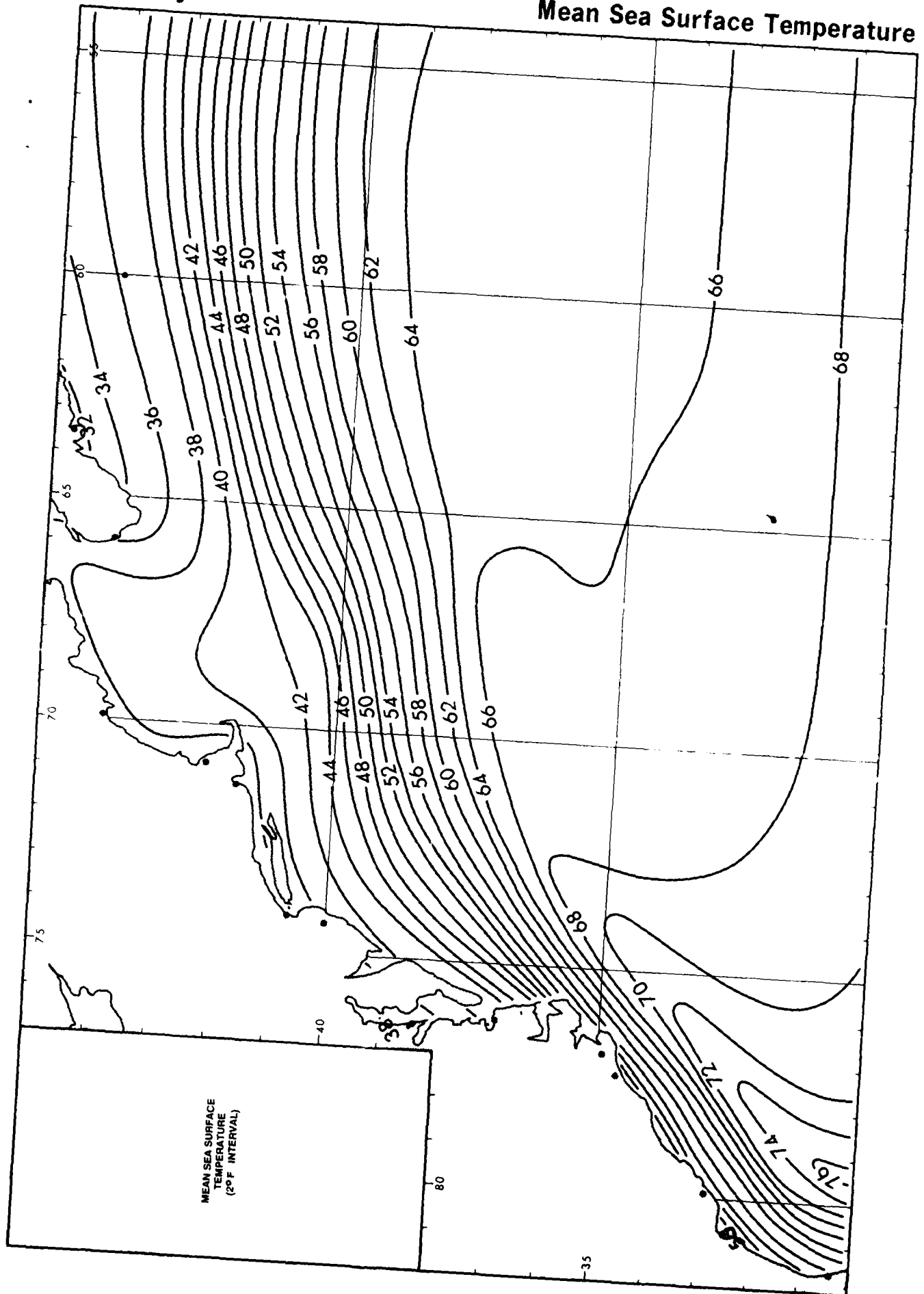
February

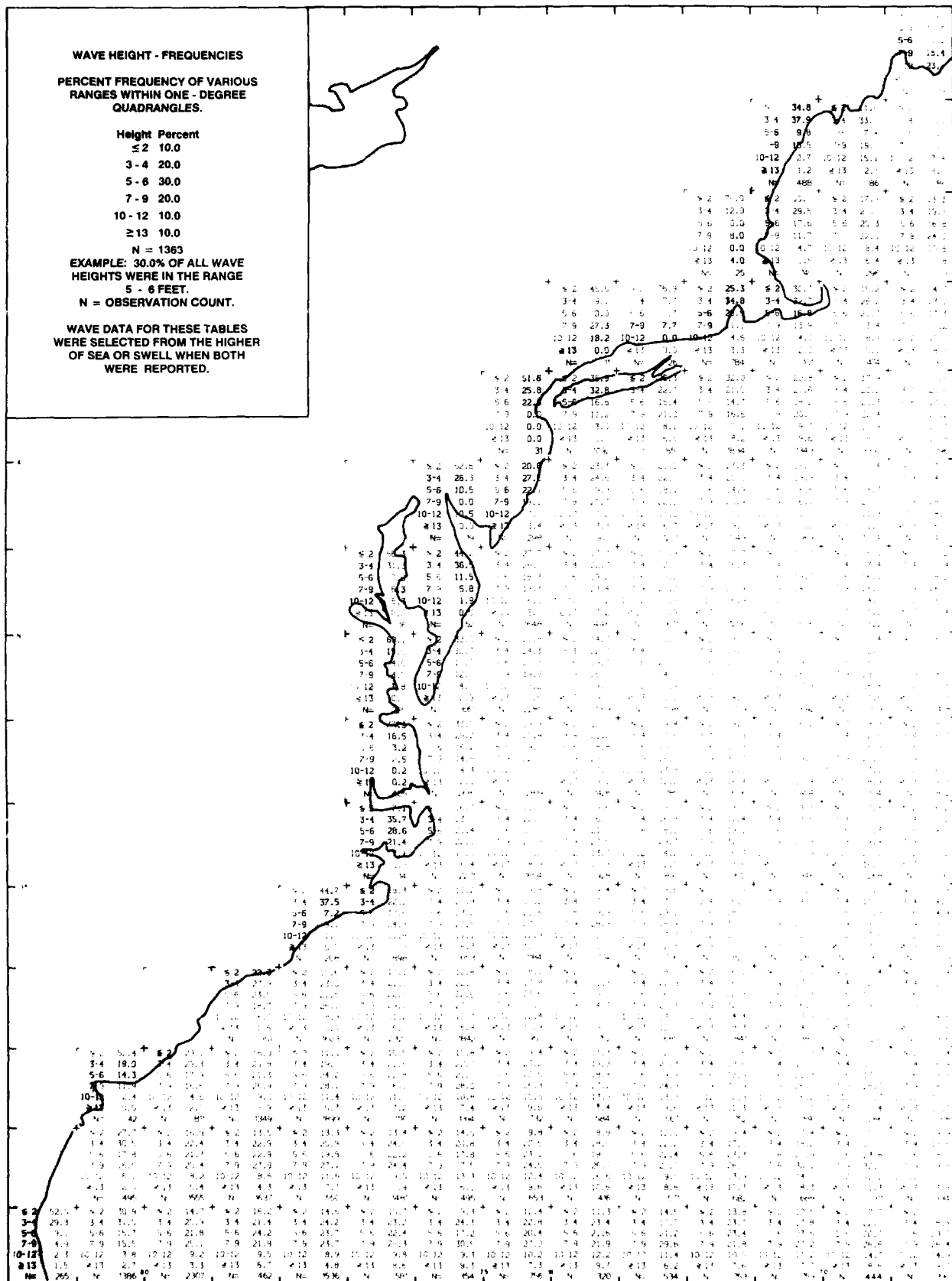
Mean Air Temperature



February

Mean Sea Surface Temperature

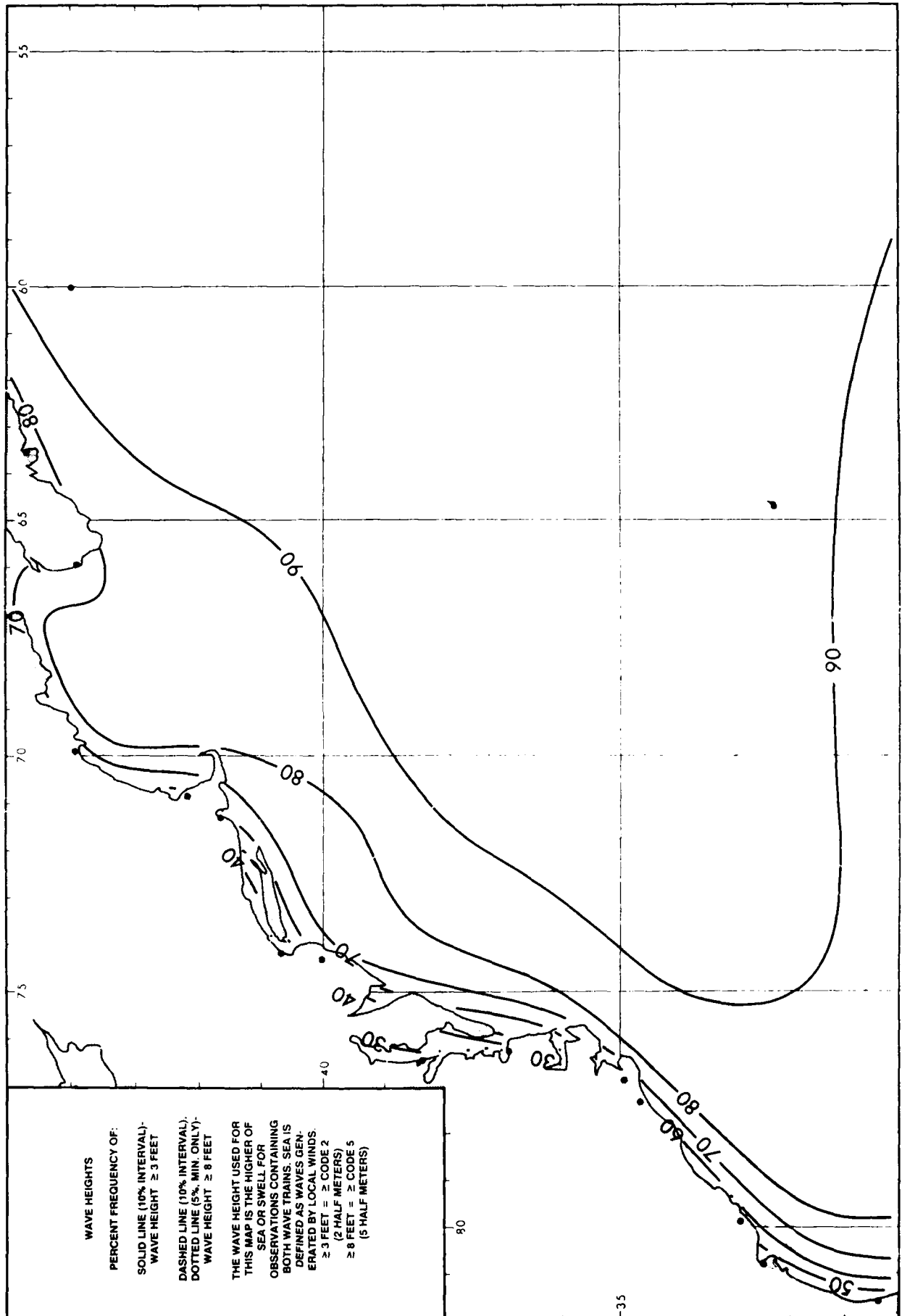


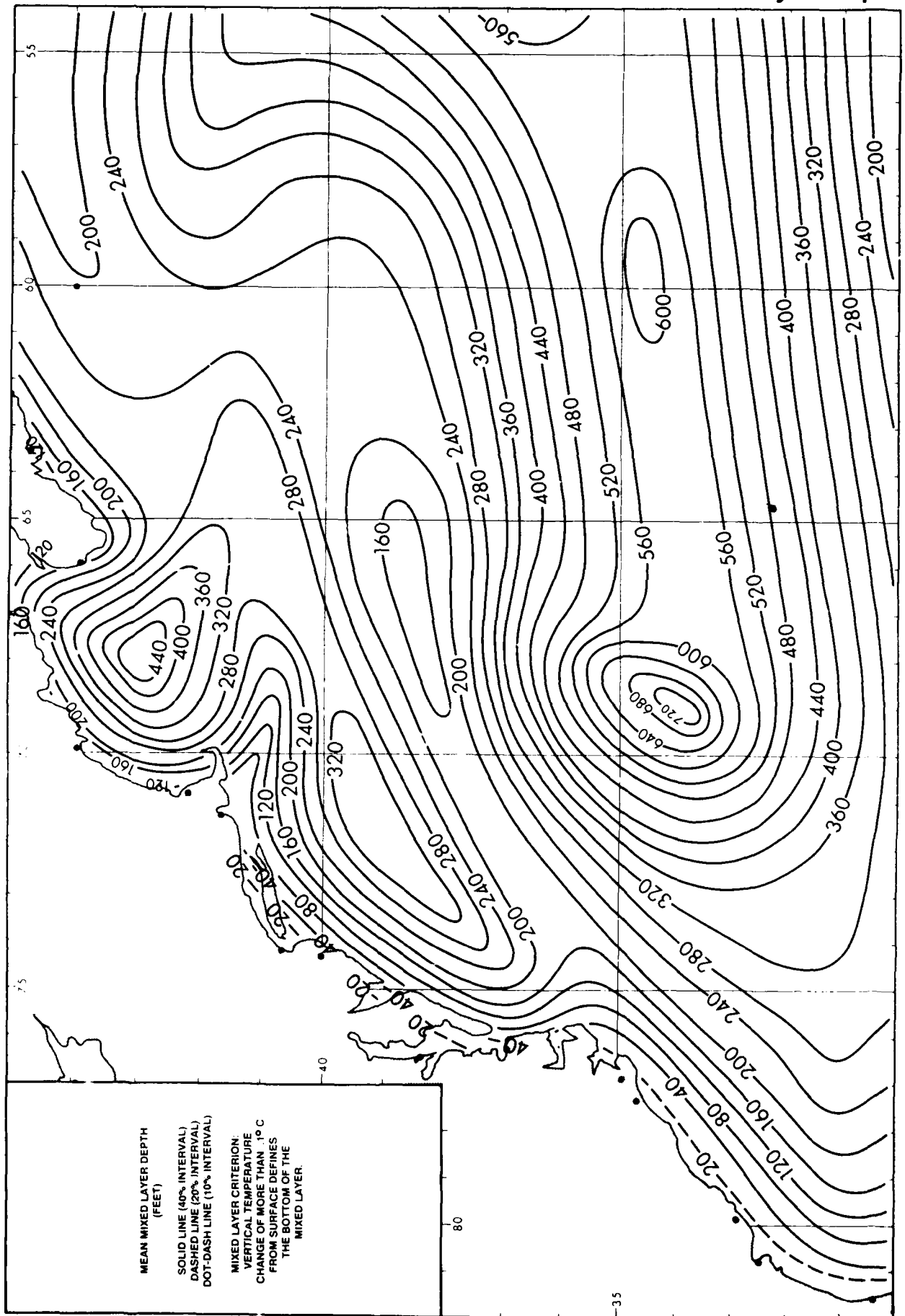


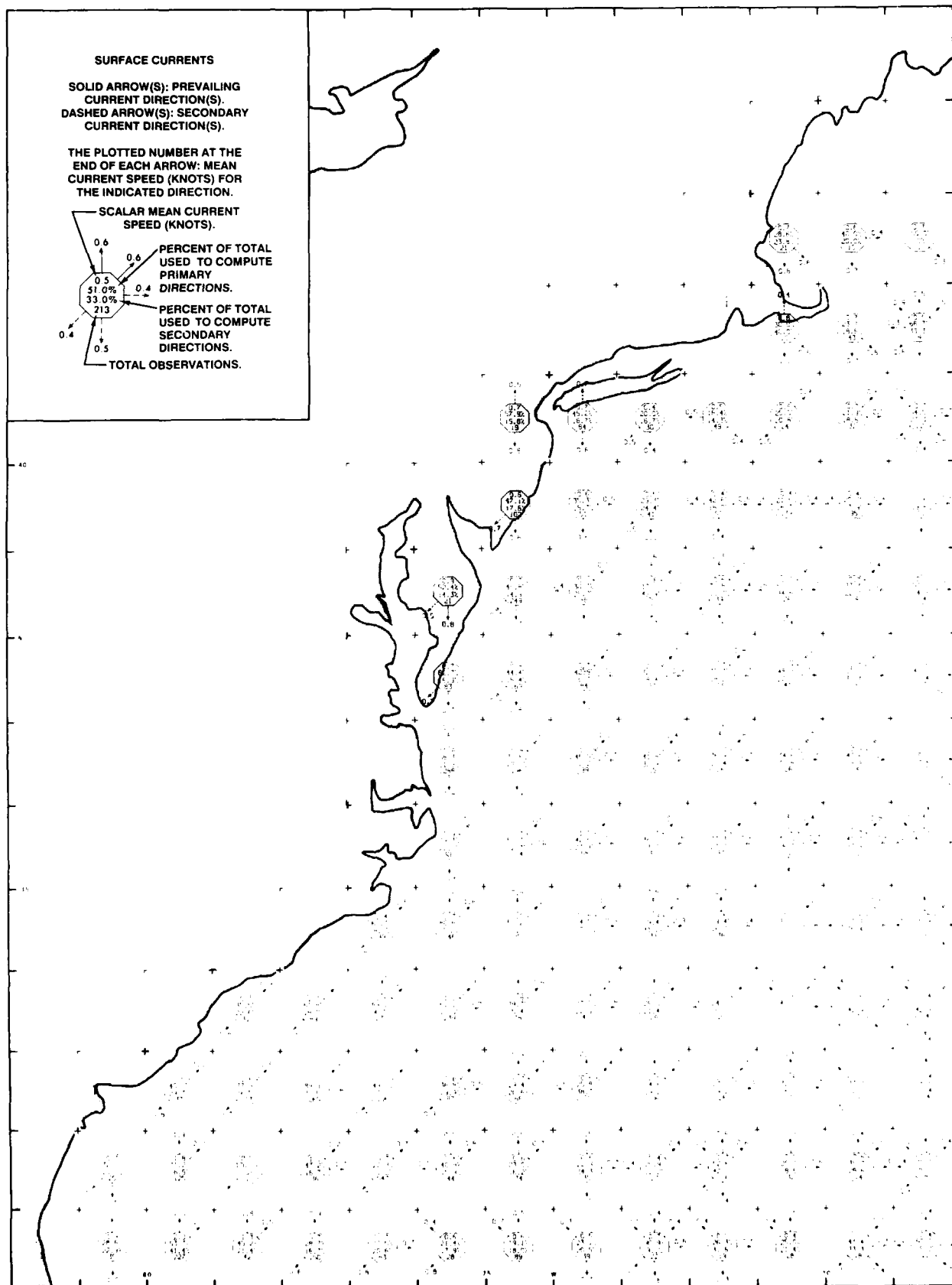
Wave Height

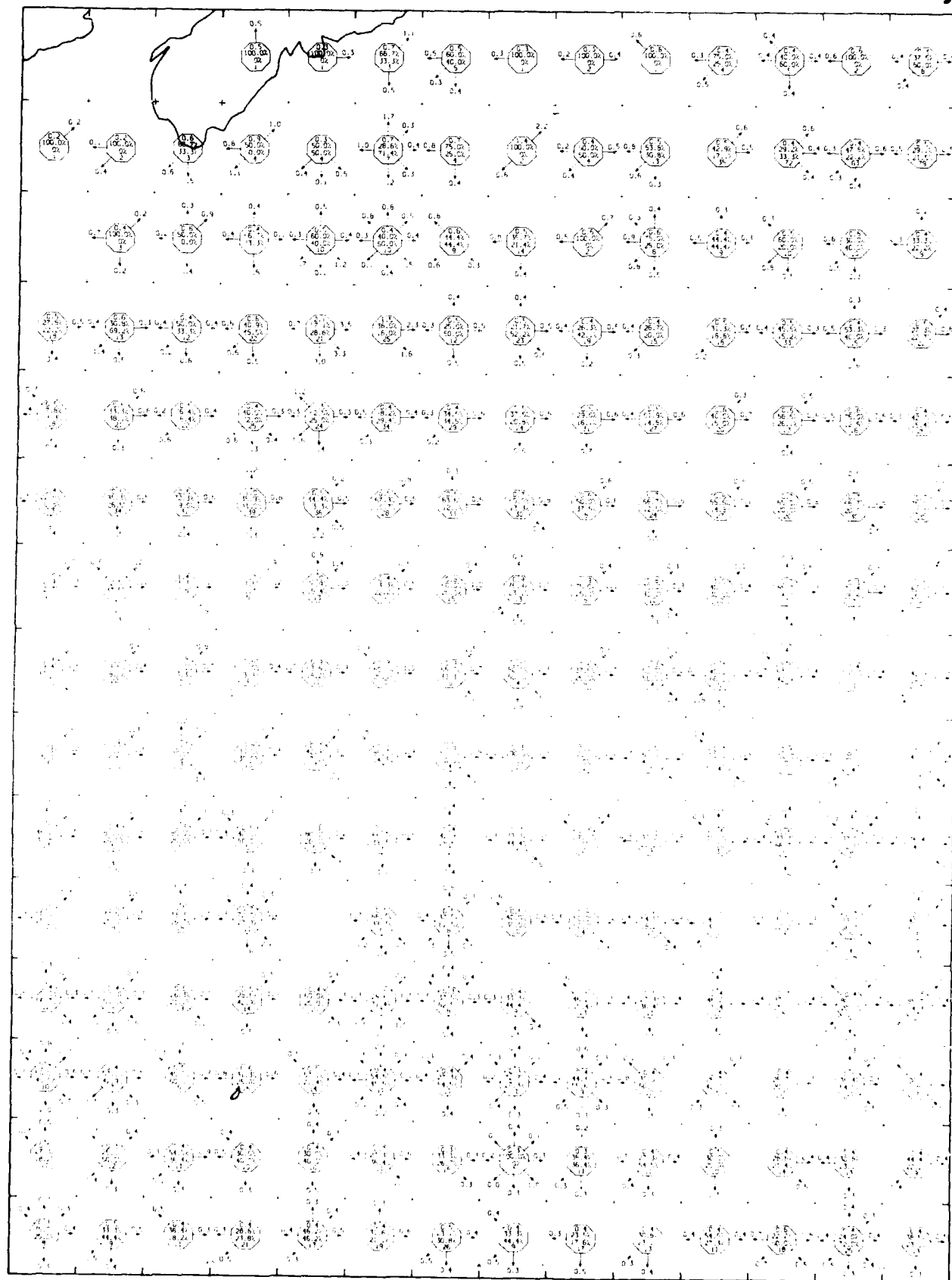
February

3.2	3.3	5.2	30.3	5.2	10.0	5.2	21.4	5.2	15.5	5.2	11.4	5.2	9.2	5.2	6.2	5.2	8.1	5.2	6.1	5.2	6.4	5.2	9.1	5.2	4.6	5.2	8
3.4	30.0	3.4	22.3	3.4	40.0	3.4	19.0	3.4	18.1	3.4	20.9	3.4	18.5	3.4	17.7	3.4	17.1	3.4	12.1	3.4	13.1	3.4	14.4	3.4	15.5	3.4	11.8
5.6	10.0	5.6	13.7	5.6	10.0	5.6	9.5	5.6	12.1	5.6	17.8	5.6	14.4	5.6	16.8	5.6	16.1	5.6	14.8	5.6	13.6	5.6	12.1	5.6	18.7	5.6	2.2
7.9	33.3	7.9	29.0	7.9	40.0	7.9	33.7	7.9	27.5	7.9	33.1	7.9	32.0	7.9	39.1	7.9	39.2	7.9	29.7	7.9	2.3	7.9	26.4	7.9	26.1	7.9	46.6
10.12	23.3	10.12	3.7	10.12	10.0	10.12	9.7	10.12	9.4	10.12	9.6	10.12	9.8	10.12	13.9	10.12	15.1	10.12	14.9	10.12	17.4	10.12	15.5	10.12	20.6	10.12	15
4.13	0.0	4.13	0.5	4.13	0.0	4.13	1.1	4.13	8.5	4.13	8.1	4.13	11.1	4.13	6.2	4.13	12.9	4.13	16.6	4.13	9.5	4.13	20.9	4.13	23.1	4.13	25.5
N=	30	N=	431	N=	10	N=	42	N=	89	N=	159	N=	368	N=	411	N=	2242	N=	424	N=	580	N=	277	N=	298	N=	25.1
5.2	11.4	5.2	24.6	5.2	13.4	5.2	9.4	5.2	11.2	5.2	10.9	5.2	9.1	5.2	5.4	5.2	15.5	5.2	6.3	5.2	7.1	5.2	5.4	5.2	7.8	5.2	5.2
3.4	20.1	3.4	25.3	3.4	22.0	3.4	28.1	3.4	21.3	3.4	14.5	3.4	19.2	3.4	13.5	3.4	17.5	3.4	16.9	3.4	3.2	3.4	13.4	3.4	9.0	3.4	12.8
5.6	15.4	5.6	17.7	5.6	12.1	5.6	15.2	5.6	18.4	5.6	19.3	5.6	16.2	5.6	19.8	5.6	17.8	5.6	13.5	5.6	18.7	5.6	13.8	5.6	14.7	5.6	16.3
7.9	26.0	7.9	22.9	7.9	29.1	7.9	29.4	7.9	30.1	7.9	29.5	7.9	28.9	7.9	31.0	7.9	30.7	7.9	29.4	7.9	31.9	7.9	23.0	7.9	27.6	7.9	2.2
10.12	18.1	10.12	6.1	10.12	15.6	10.12	11.7	10.12	9.1	10.12	16.1	10.12	11.5	10.12	18.2	10.12	18.5	10.12	15.5	10.12	16.5	10.12	14.5	10.12	24.4	10.12	15.7
4.13	8.1	4.13	3.5	4.13	6.7	4.13	3.2	4.13	3.8	4.13	9.5	4.13	17.1	4.13	14.3	4.13	12.5	4.13	17.1	4.13	16.5	4.13	13.9	4.13	2.4	4.13	7
N=	149	N=	168	N=	313	N=	488	N=	498	N=	440	N=	433	N=	299	N=	917	N=	440	N=	300	N=	267	N=	246	N=	281
5.2	13.4	5.2	6.9	5.2	9.1	5.2	13.9	5.2	7.4	5.2	6.2	5.2	7.4	5.2	3.9	5.2	9.5	5.2	4.9	5.2	6.5	5.2	4.0	5.2	2.0	5.2	4.1
3.4	13.2	3.4	19.9	3.4	19.4	3.4	16.3	3.4	19.9	3.4	15.2	3.4	15.9	3.4	12.8	3.4	16.9	3.4	8.7	3.4	5.8	3.4	7.7	3.4	8.7	3.4	5
5.6	13.3	5.6	14.1	5.6	17.5	5.6	21.8	5.6	17.7	5.6	17.1	5.6	16.7	5.6	18.0	5.6	13.0	5.6	14.8	5.6	14.2	5.6	11.1	5.6	14.8	5.6	1.8
7.9	23.6	7.9	51.9																								



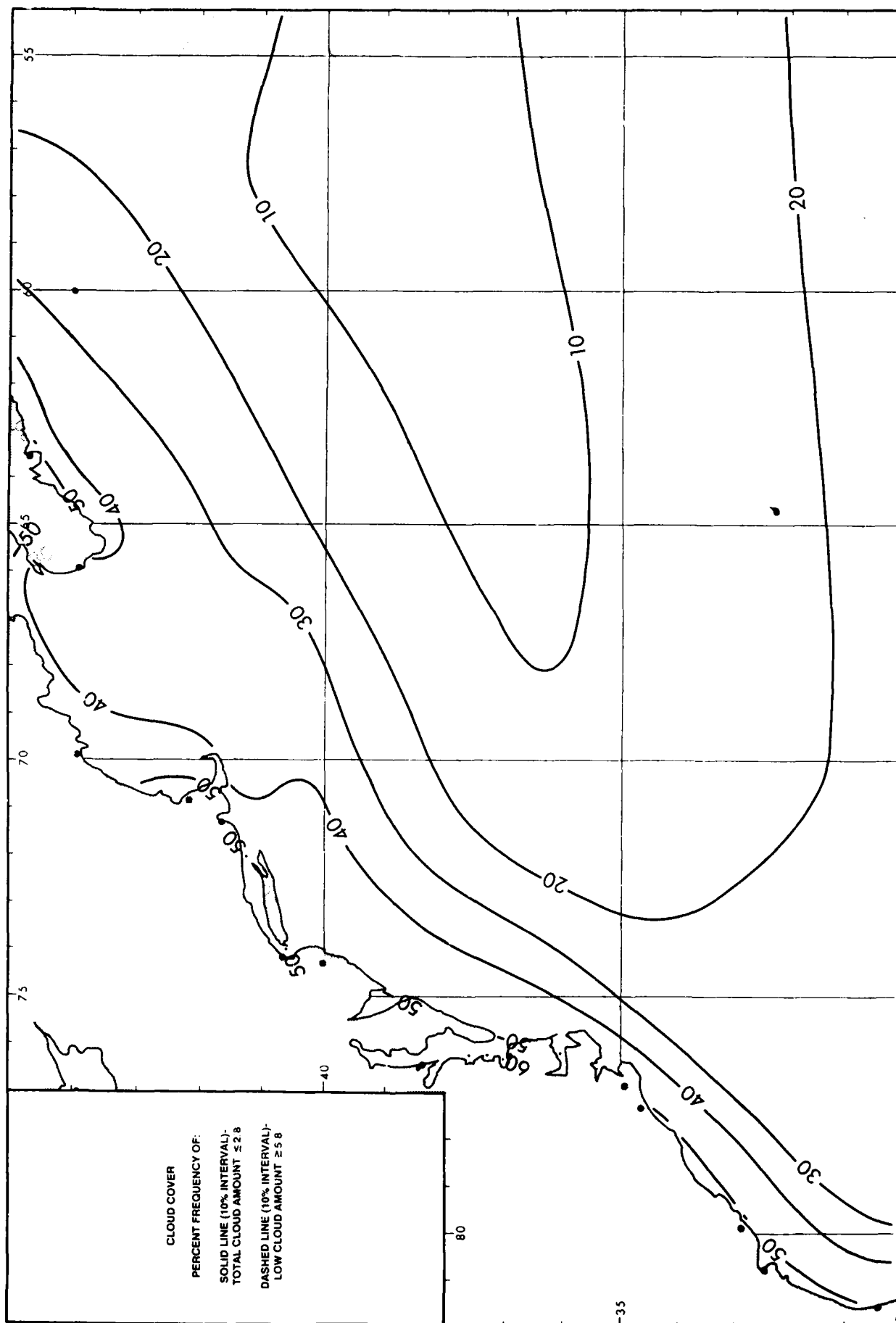






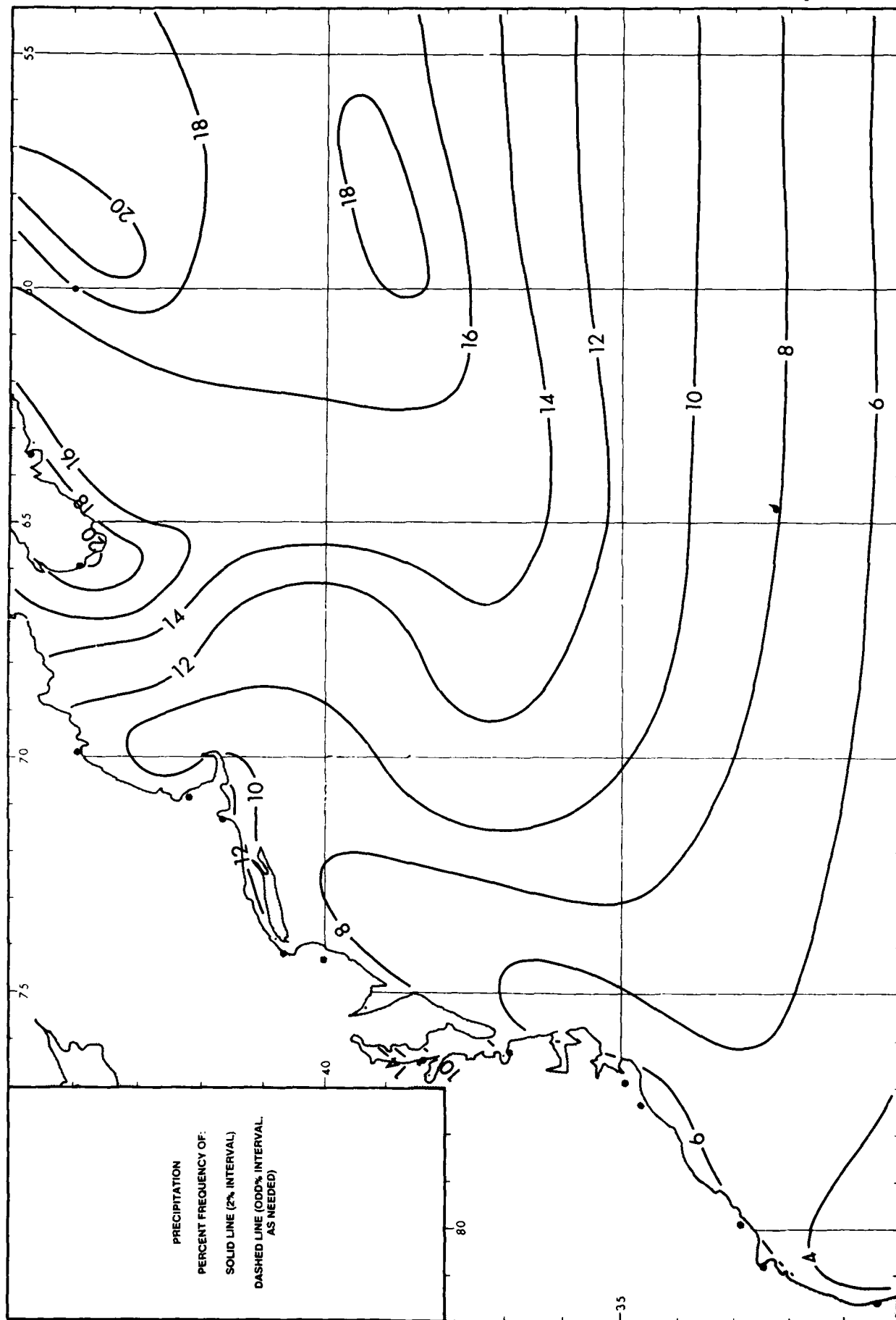
March

Clouds



March

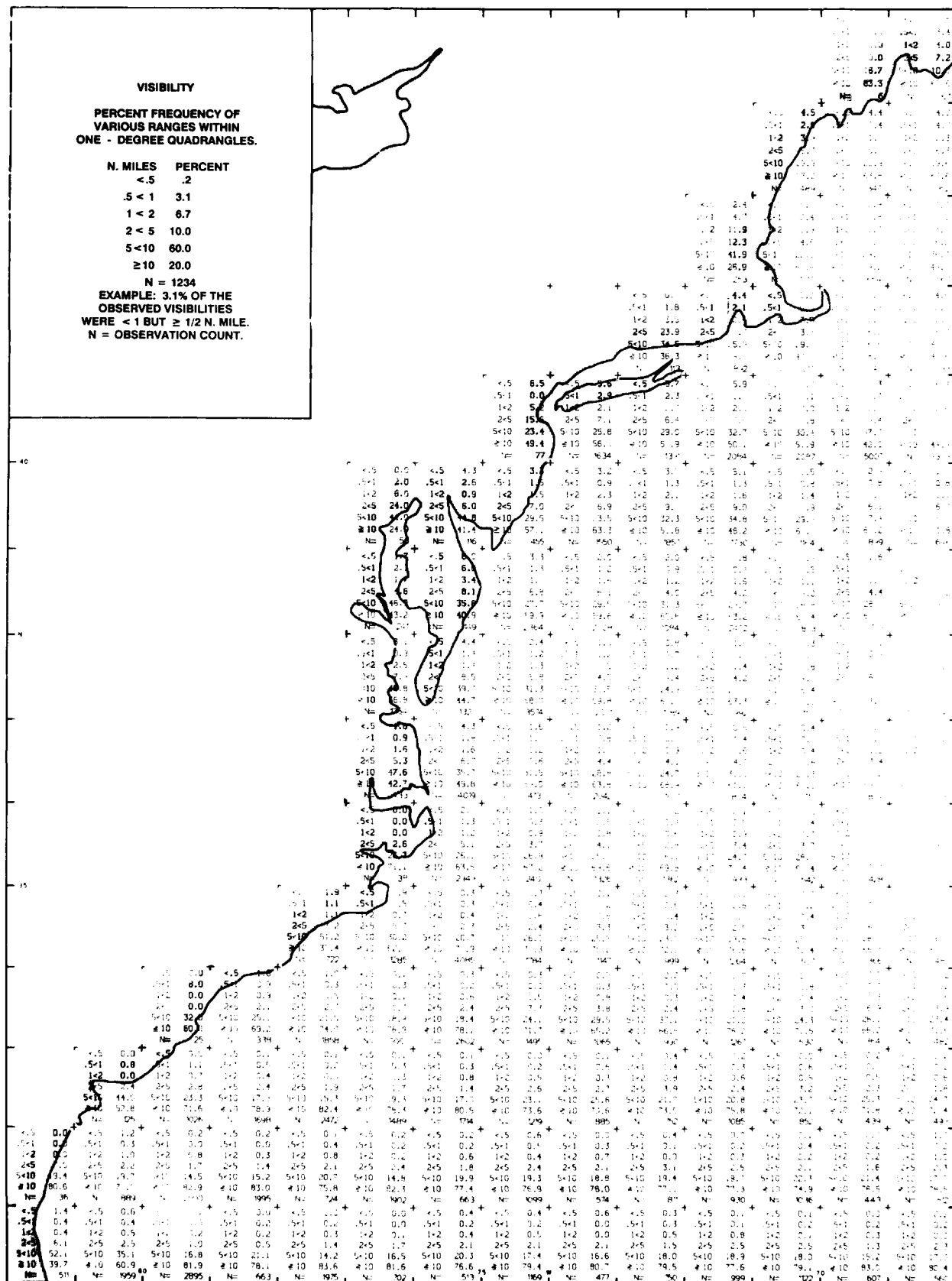
Precipitation



VISIBILITY
PERCENT FREQUENCY OF
VARIOUS RANGES WITHIN
ONE - DEGREE QUADRANGLES.

N. MILES	PERCENT
<.5	.2
.5 < 1	3.1
1 < 2	6.7
2 < 5	10.0
5 < 10	60.0
≥ 10	20.0

N = 1234
 EXAMPLE: 3.1% OF THE
 OBSERVED VISIBILITIES
 WERE < 1 BUT ≥ 1/2 N. MILE.
 N = OBSERVATION COUNT.

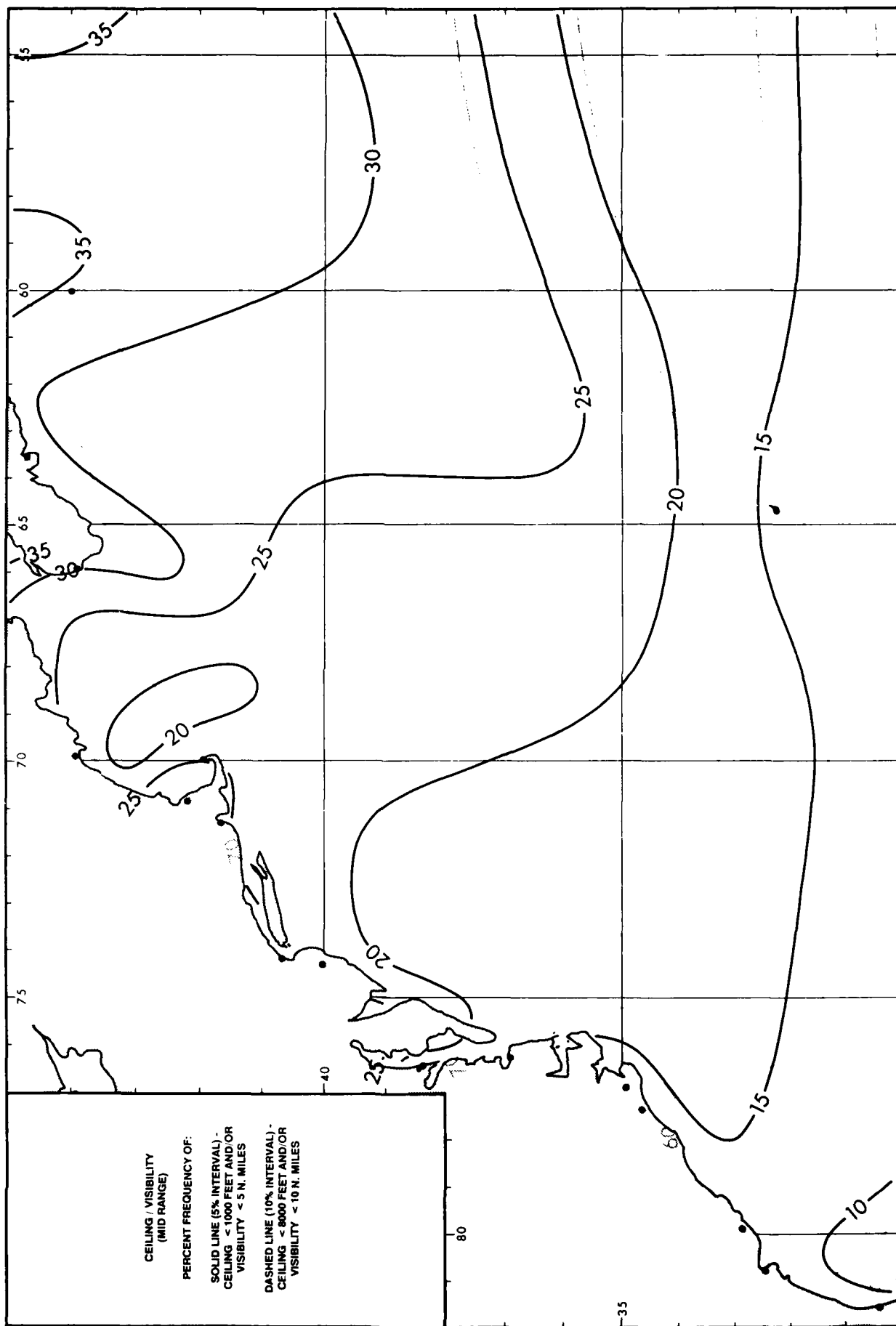


4.5	4.5	5.4	4.5	5.4	4.5	5.1	4.5	9.8	4.5	9.1	4.5	7.0	4.5	8.1	4.5	12.8	4.5	15.6	4.5	9.0	4.5	7.3	4.5	8.5	4.5	8.0	
5.41	2.3	5.41	2.8	5.41	1.7	5.41	3.1	5.41	2.6	5.41	3.1	5.41	3.9	5.41	2.5	5.41	3.3	5.41	2.4	5.41	2.9	5.41	3.8	5.41	1.7	5.41	3.3
142	5.2	142	3.5	142	5.2	142	4.9	142	2.9	142	3.4	142	1.7	142	4.4	142	4.0	142	3.0	142	4.3	142	2.5	142	3.6	142	4.0
245	5.5	245	7.5	245	7.5	245	9.8	245	6.6	245	6.8	245	7.8	245	9.6	245	11.2	245	9.6	245	10.5	245	11.4	245	7.8	245	7.7
5410	15.2	5410	20.0	5410	27.7	5410	21.4	5410	18.0	5410	23.7	5410	25.5	5410	26.9	5410	25.6	5410	19.7	5410	30.8	5410	29.3	5410	20.0	5410	26.3
±10	69.9	±10	60.4	±10	51.4	±10	65.0	±10	60.1	±10	54.4	±10	54.1	±10	48.6	±10	43.2	±10	49.8	±10	42.4	±10	45.7	±10	50.4	±10	50.7
N=	309	N=	305	N=	73	N=	781	N=	2935	N=	949	N=	753	N=	770	N=	2690	N=	1954	N=	853	N=	396	N=	41	N=	426
4.5	6.5	4.5	6.5	4.5	5.5	4.5	7.2	4.5	7.1	4.5	7.0	4.5	5.7	4.5	8.9	4.5	7.6	4.5	7.6	4.5	4.3	4.5	5.5	4.5	7.6	4.5	4.9
5.41	1.9	5.41	1.8	5.41	3.2	5.41	2.2	5.41	3.6	5.41	1.6	5.41	3.6	5.41	2.9	5.41	2.4	5.41	2.7	5.41	2.4	5.41	1.7	5.41	1.8	5.41	1.8
142	2.5	142	3.6	142	1.4	142	3.0	142	1.4	142	3.7	142	3.7	142	4.1	142	3.6	142	2.9	142	3.7	142	3.6	142	2.2	142	4.5
245	7.9	245	7.6	245	9.3	245	8.2	245	7.2	245	7.8	245	9.3	245	9.2	245	9.8	245	9.8	245	9.2	245	8.6	245	7.0	245	9.0
5410	17.8	5410	18.7	5410	35.3	5410	25.5	5410	30.3	5410	27.2	5410	27.4	5410	25.6	5410	31.0	5410	27.6	5410	32.0	5410	27.3	5410	31.7	5410	34.5
±10	63.4	±10	61.4	±10	43.3	±10	53.9	±10	50.4	±10	52.7	±10	50.3	±10	49.3	±10	44.6	±10	49.3	±10	48.4	±10	53.3	±10	49.7	±10	45.3
N=	692	N=	2589	N=	1709	N=	1037	N=	814	N=	1178	N=	776	N=	2791	N=	1337	N=	920	N=	628	N=	582	N=	555	N=	510
4.5	3.9	4.5	5.8	4.5	7.9	4.5	4.7	4.5	4.4	4.5	4.9	4.5	5.6	4.5	3.1	4.5	4.4	4.5	2.2	4.5	2.2	4.5	3.0	4.5	3.3	4.5	2.5
5.41	1.7	5.41	1.8	5.41	2.9	5.41	2.0	5.41	0.9	5.41	1.3	5.41	1.7	5.41	1.1	5.41	2.2	5.41	0.4	5.41	1.1	5.41	1.3	5.41	2.6	5.41	2.4
142	2.2	142	1.2	142	3.3	142	3.8	142	2.8	142	1.9	142	2.7	142	1.3	142	1.8	142	2.2	142	2.7	142	2.5	142	1.9	142	2.0
245	5.6	245	9.9	245	9.0	245	6.9	245	6.9	245	7.6	245	6.5	245													

4.5	4.5	5.4	4.5	5.4	4.5	5.1	4.5	9.8	4.5	9.1	4.5	7.0	4.5	8.1	4.5	12.8	4.5	15.6	4.5	9.0	4.5	7.3	4.5	8.5	4.5	8.0	
5.41	2.3	5.41	2.8	5.41	1.7	5.41	3.1	5.41	2.6	5.41	3.1	5.41	3.9	5.41	2.5	5.41	3.3	5.41	2.4	5.41	2.9	5.41	3.8	5.41	1.7	5.41	3.3
142	5.2	142	3.5	142	5.2	142	4.9	142	2.9	142	3.4	142	1.7	142	4.4	142	4.0	142	3.0	142	4.3	142	2.5	142	3.6	142	4.0
245	5.5	245	7.5	245	7.5	245	9.8	245	6.6	245	6.8	245	7.8	245	9.6	245	11.2	245	9.6	245	10.5	245	11.4	245	7.8	245	7.7
5410	15.2	5410	20.0	5410	27.7	5410	21.4	5410	18.0	5410	23.7	5410	25.5	5410	26.9	5410	25.6	5410	19.7	5410	30.8	5410	29.3	5410	20.0	5410	26.3
±10	69.9	±10	60.4	±10	51.4	±10	65.0	±10	60.1	±10	54.4	±10	54.1	±10	48.6	±10	43.2	±10	49.8	±10	42.4	±10	45.7	±10	50.4	±10	50.7
N=	309	N=	305	N=	73	N=	781	N=	2935	N=	949	N=	753	N=	770	N=	2690	N=	1954	N=	853	N=	396	N=	41	N=	426
4.5	6.5	4.5	6.5	4.5	5.5	4.5	7.2	4.5	7.1	4.5	7.0	4.5	5.7	4.5	8.9	4.5	7.6	4.5	7.6	4.5	4.3	4.5	5.5	4.5	7.6	4.5	4.9
5.41	1.9	5.41	1.8	5.41	3.2	5.41	2.2	5.41	3.6	5.41	1.6	5.41	3.6	5.41	2.9	5.41	2.4	5.41	2.7	5.41	2.4	5.41	1.7	5.41	1.8	5.41	1.8
142	2.5	142	3.6	142	1.4	142	3.0	142	1.4	142	3.7	142	3.7	142	4.1	142	3.6	142	2.9	142	3.7	142	3.6	142	2.2	142	4.5
245	7.9	245	7.6	245	9.3	245	8.2	245	7.2	245	7.8	245	9.3	245	9.2	245	9.8	245	9.8	245	9.2	245	8.6	245	7.0	245	9.0
5410	17.8	5410	18.7	5410	35.3	5410	25.5	5410	30.3	5410	27.2	5410	27.4	5410	25.6	5410	31.0	5410	27.6	5410	32.0	5410	27.3	5410	31.7	5410	34.5
±10	63.4	±10	61.4	±10	43.3	±10	53.9	±10	50.4	±10	52.7	±10	50.3	±10	49.3	±10	44.6	±10	49.3	±10	48.4	±10	53.3	±10	49.7	±10	45.3
N=	692	N=	2589	N=	1709	N=	1037	N=	814	N=	1178	N=	776	N=	2791	N=	1337	N=	920	N=	628	N=	582	N=	555	N=	510
4.5	3.9	4.5	5.8	4.5	7.9	4.5	4.7	4.5	4.4	4.5	4.9	4.5	5.6	4.5	3.1	4.5	4.4	4.5	2.2	4.5	2.2	4.5	3.0	4.5	3.3	4.5	2.5
5.41	1.7	5.41	1.8	5.41	2.9	5.41	2.0	5.41	0.9	5.41	1.3	5.41	1.7	5.41	1.1	5.41	2.2	5.41	0.4	5.41	1.1	5.41	1.3	5.41	2.6	5.41	2.4
142	2.2	142	1.2	142	3.3	142	3.8	142	2.8	142	1.9	142	2.7	142	1.3	142	1.8	142	2.2	142	2.7	142	2.5	142	1.9	142	2.0
245	5.6	245	9.9	245	9.0	245	6.9	245	6.9	245	7.6	245	6.5	245													

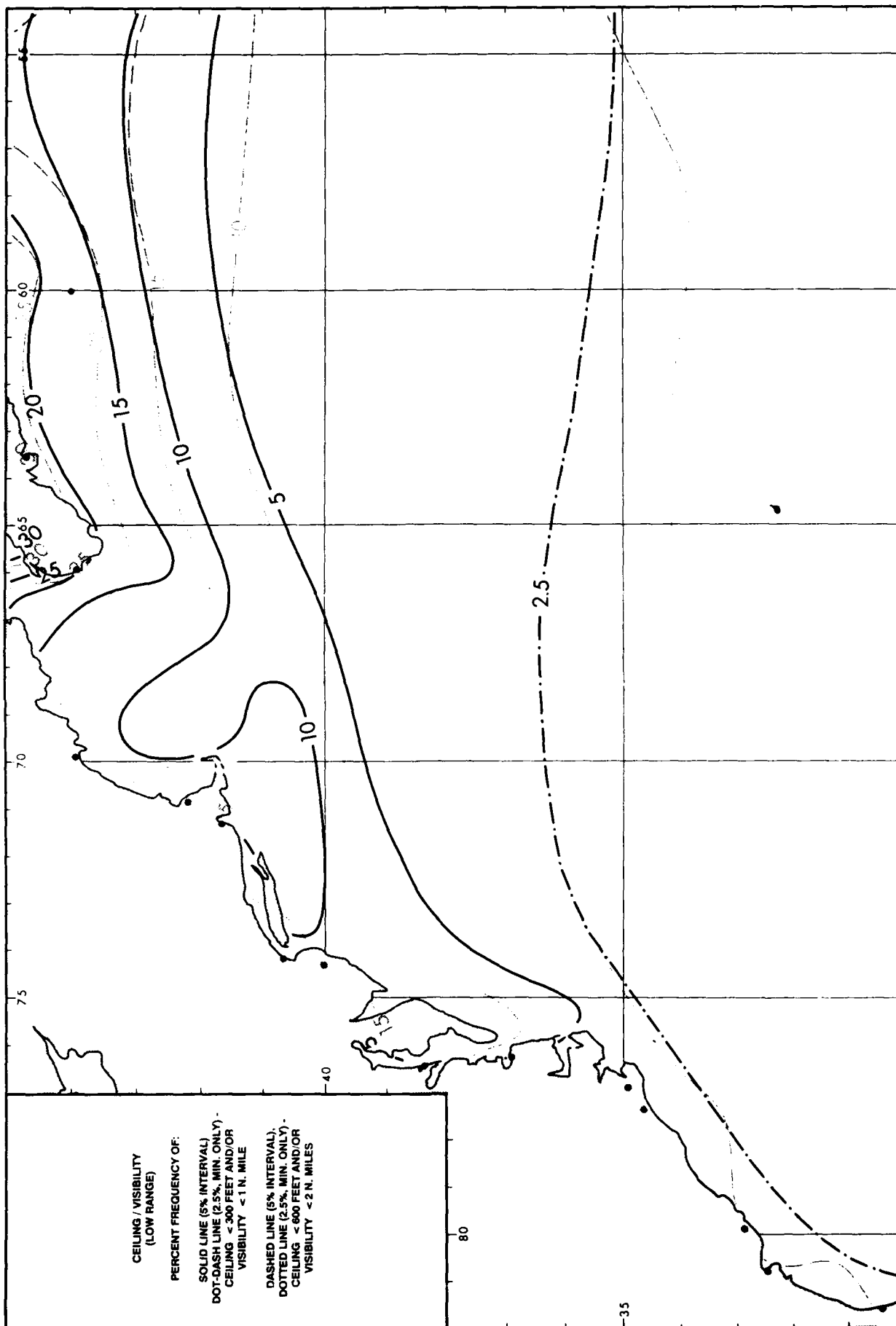
March

Ceiling / Visibility (Mid Range)



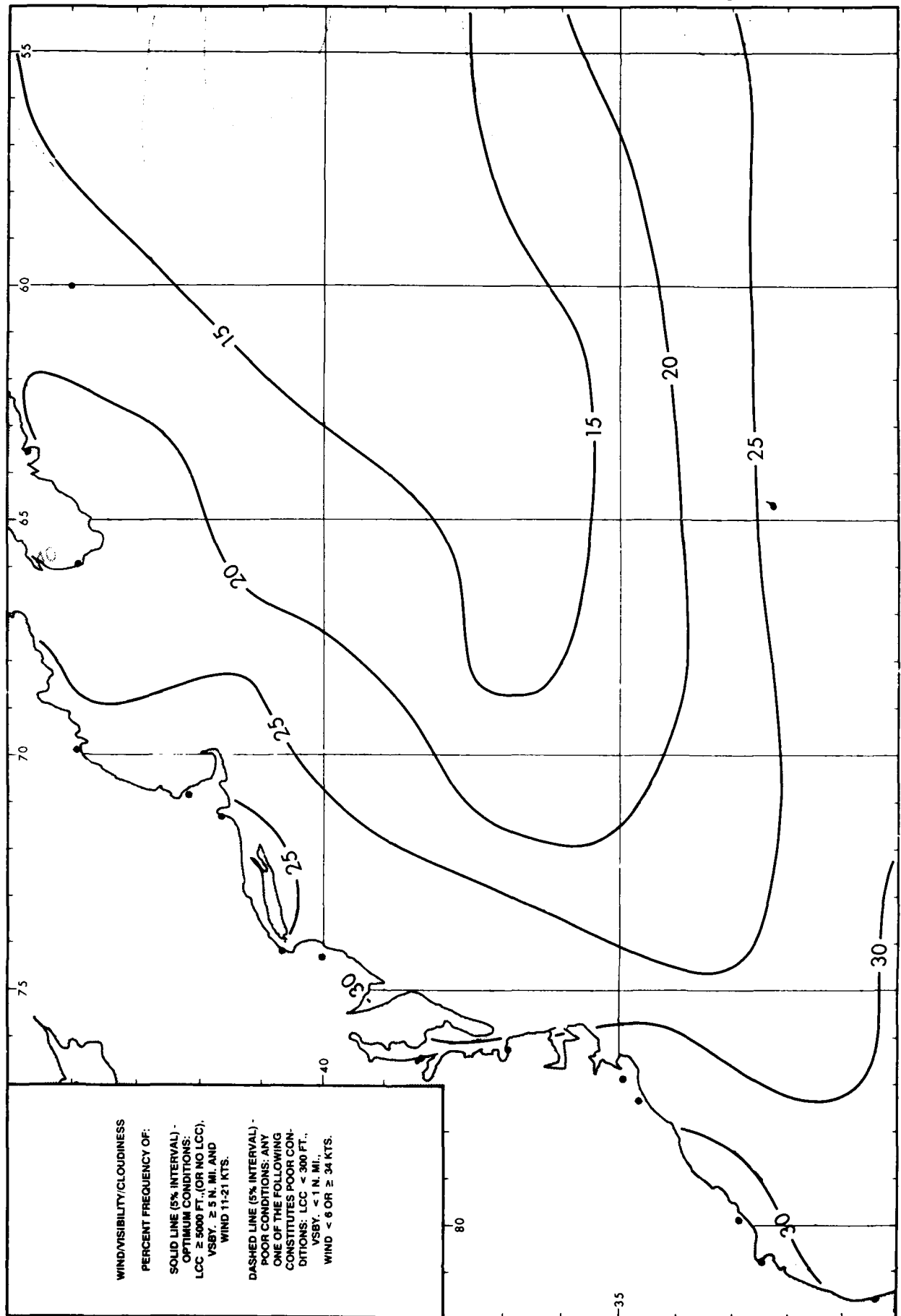
March

Ceiling / Visibility (Low Range)



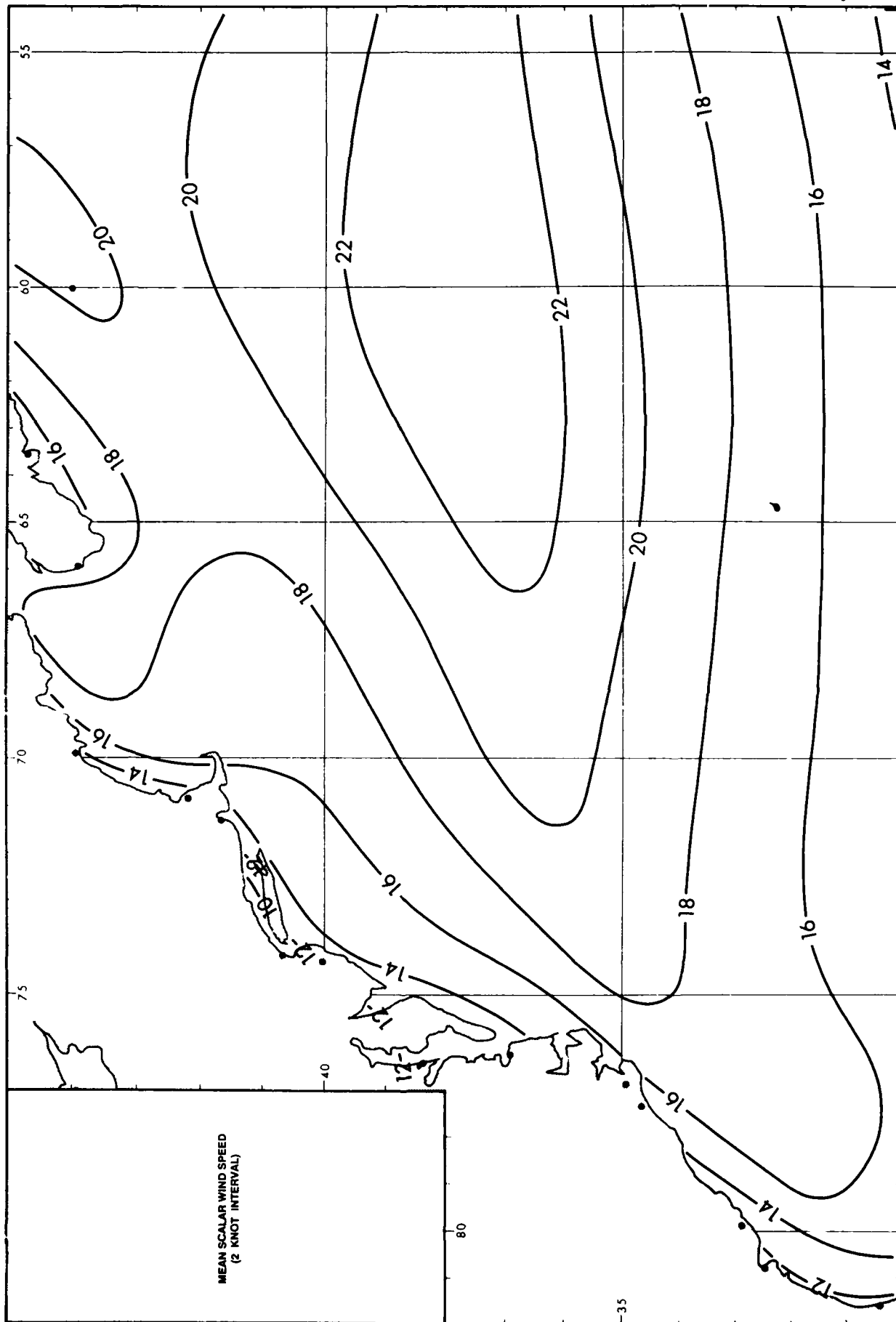
March

Wind / Visibility / Cloudiness



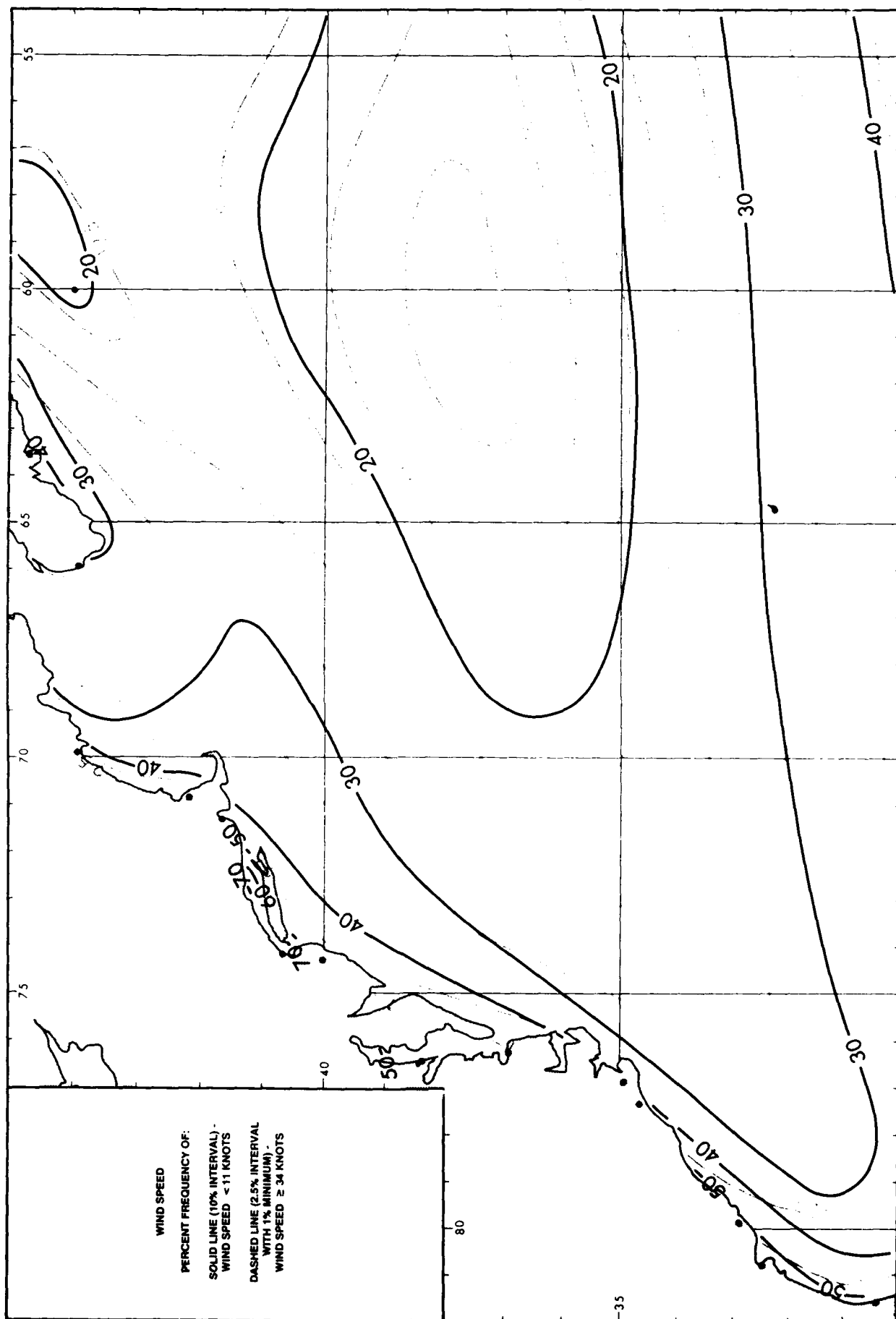
March

Mean Scalar Wind Speed



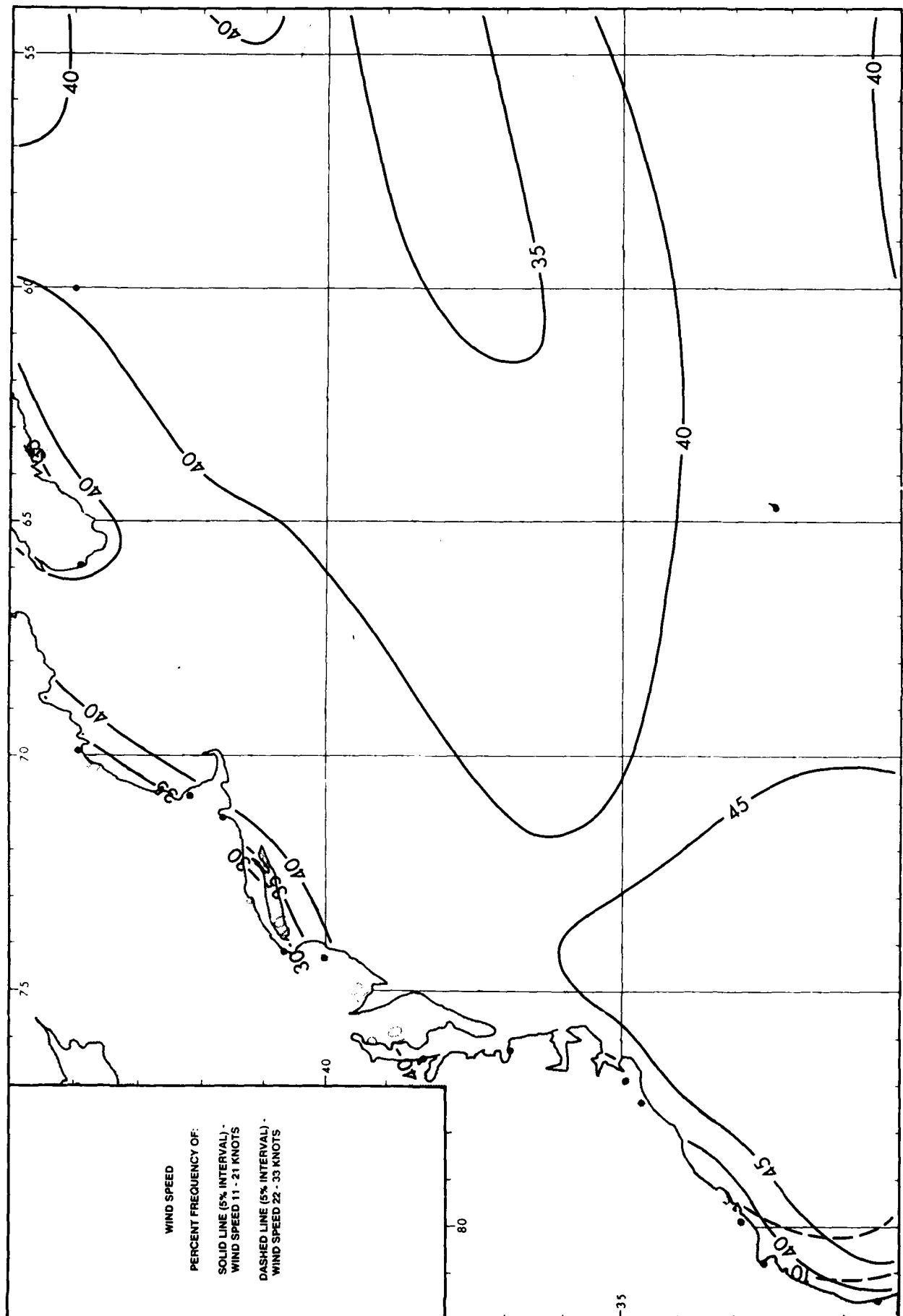
March

Wind Speed <11 and ≥ 34 Knots



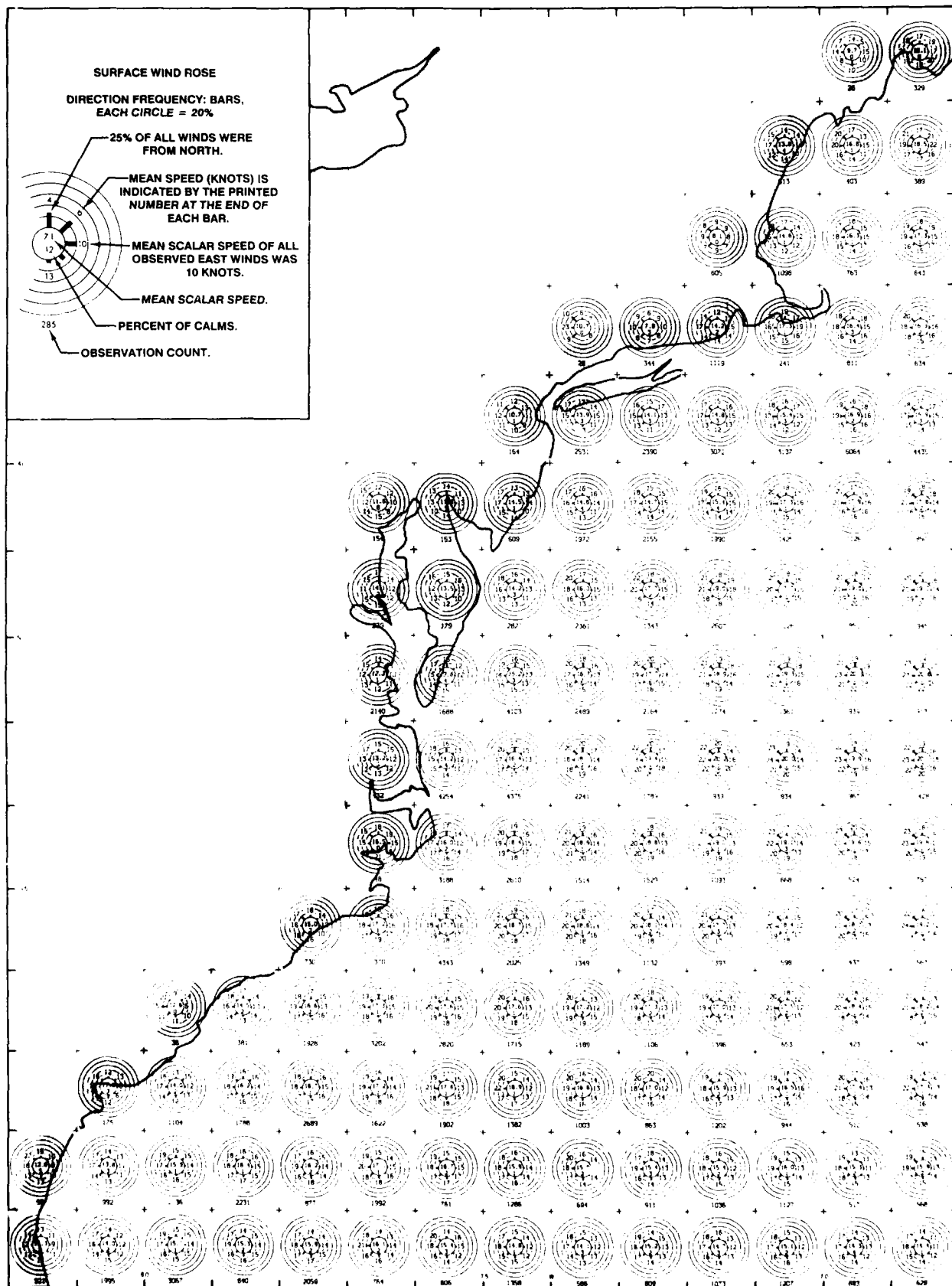
March

Wind Speed 11 - 21 and 22 - 33 Knots



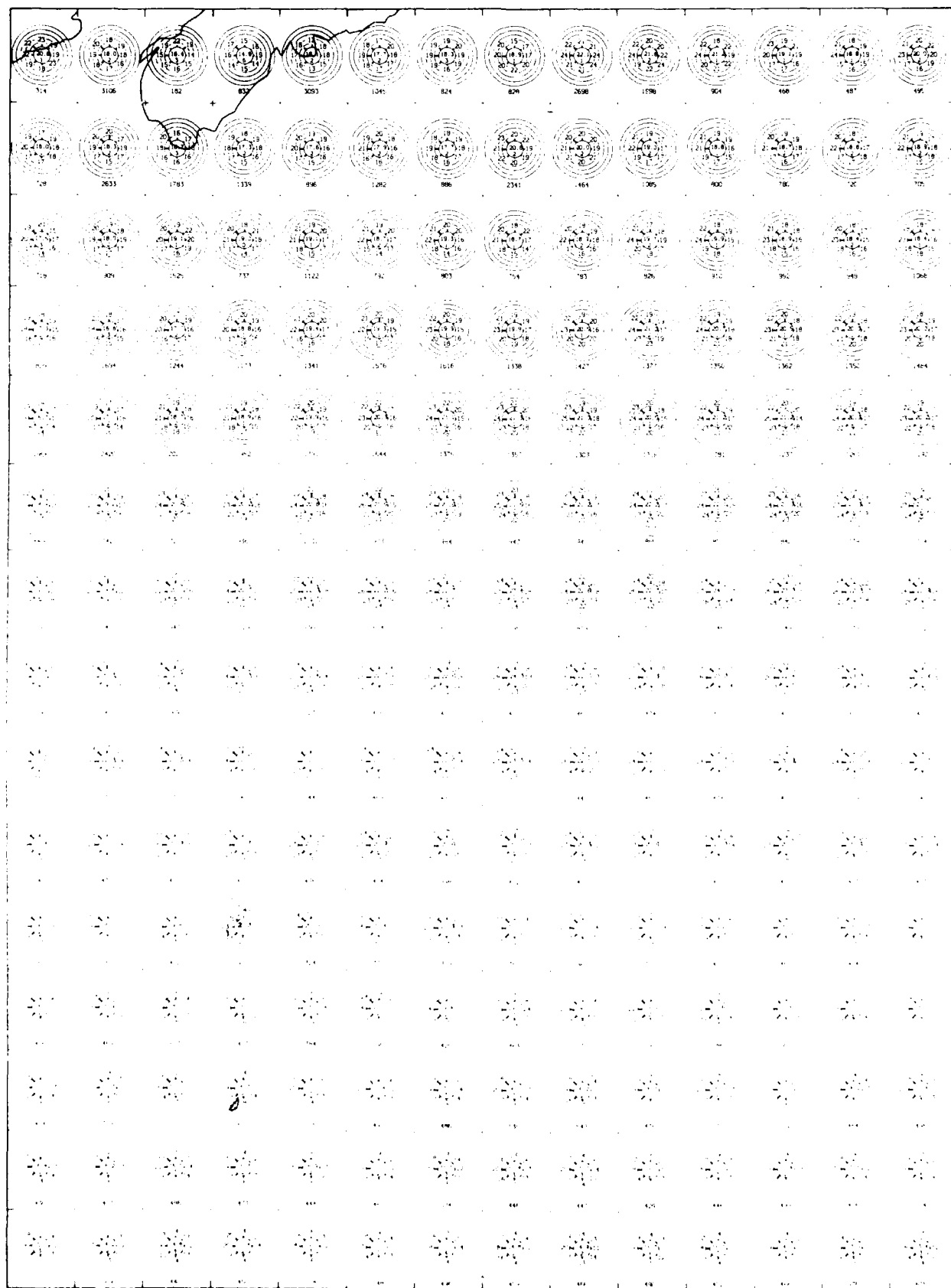
March

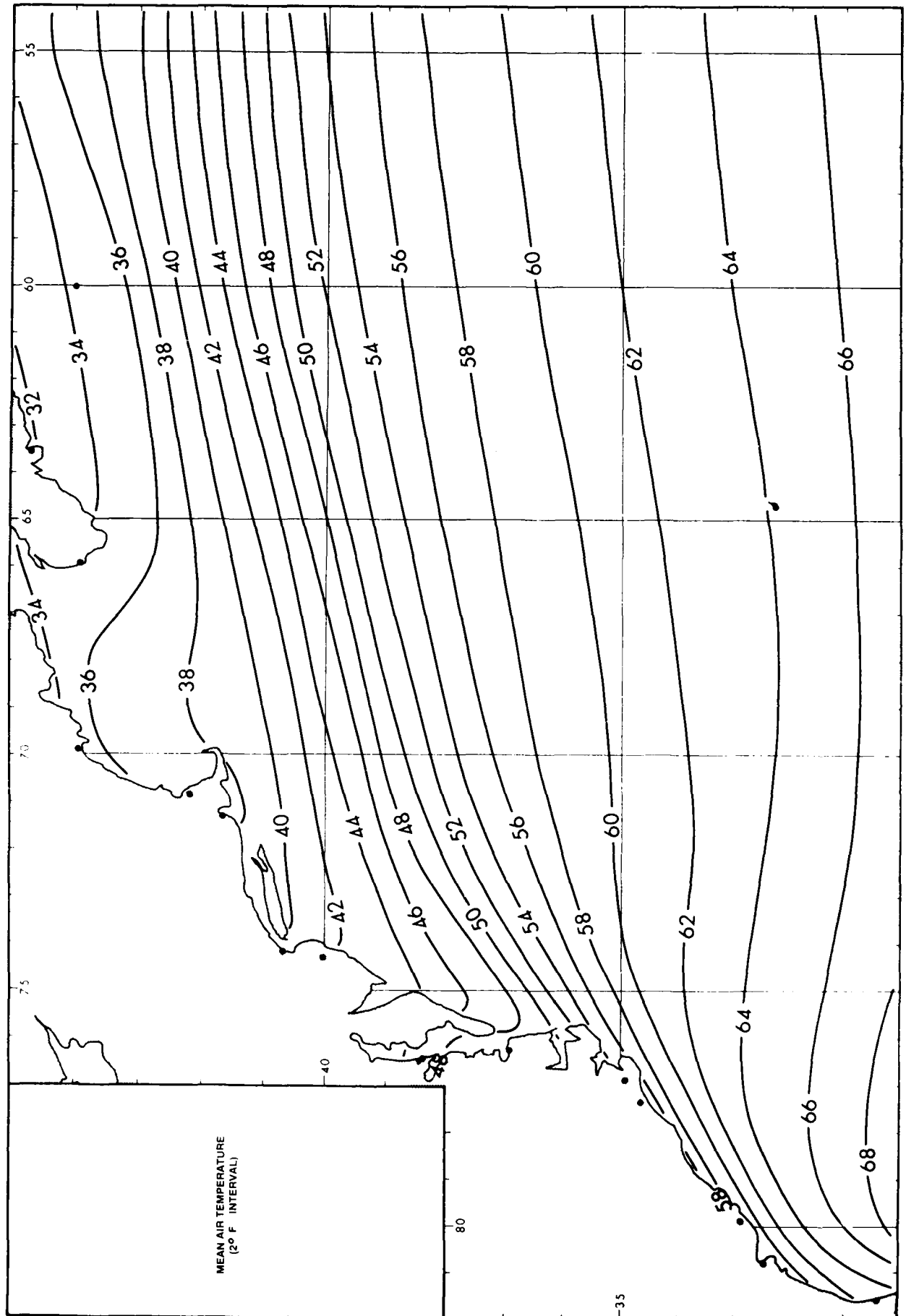
Surface Wind Roses



March

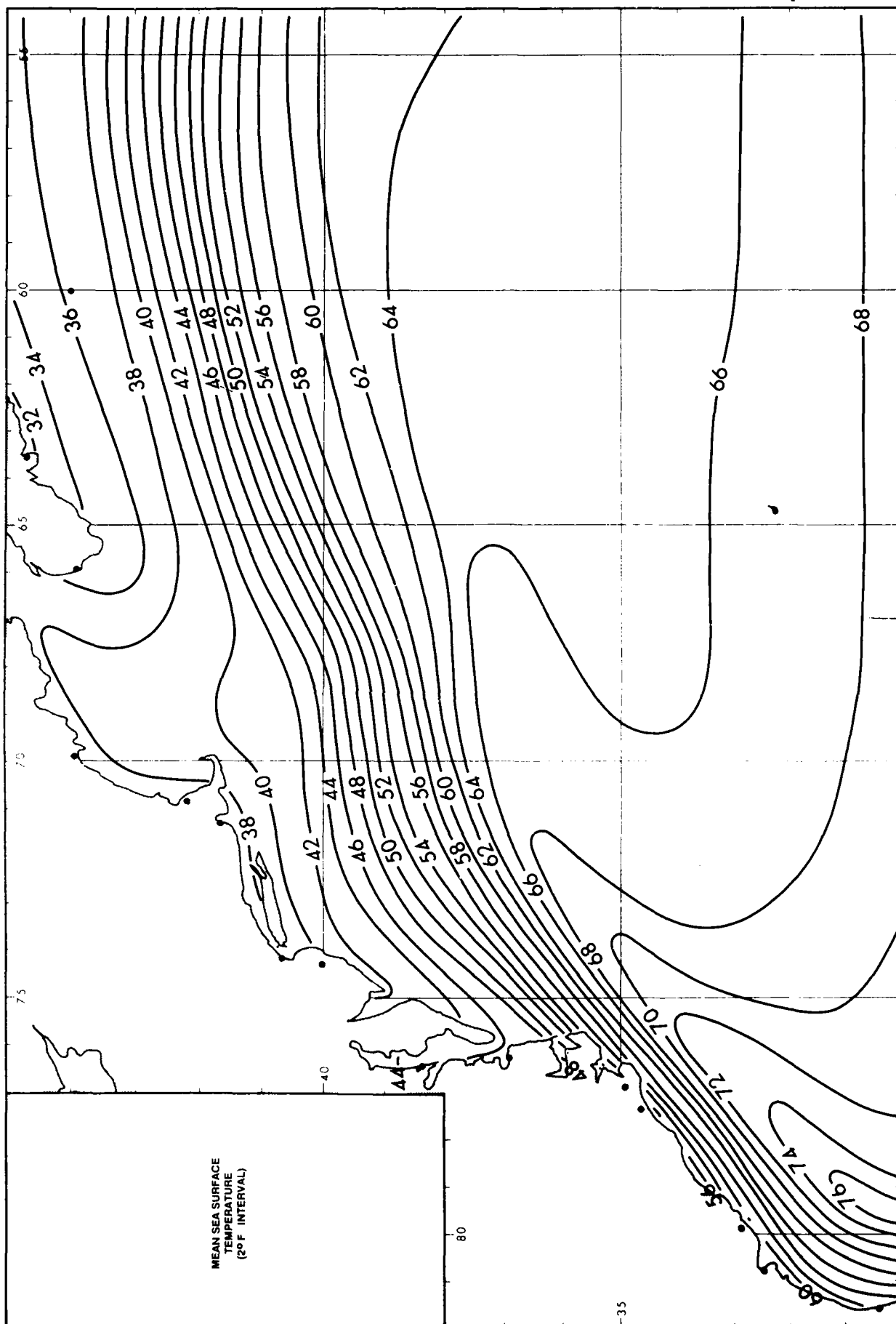
Surface Wind Roses





March

Mean Sea Surface Temperature



WAVE HEIGHT - FREQUENCIES
PERCENT FREQUENCY OF VARIOUS
RANGES WITHIN ONE-DEGREE
QUADRANGLES.

Height Percent

≤ 2 10.0

3 - 4 20.0

5 - 6 30.0

7 - 9 20.0

10 - 12 10.0

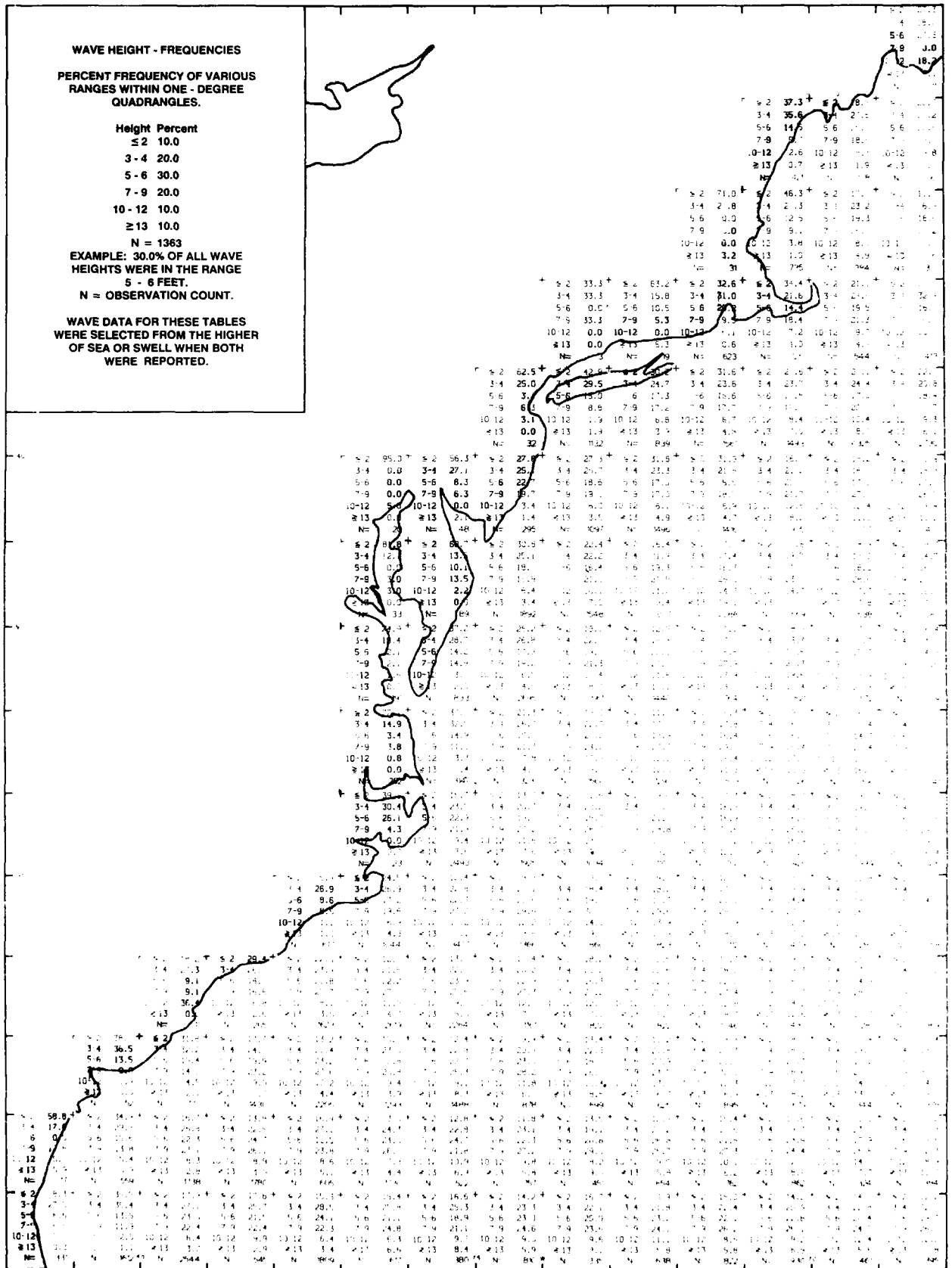
≥ 13 10.0

N = 1363

EXAMPLE: 30.0% OF ALL WAVE
 HEIGHTS WERE IN THE RANGE
 5 - 6 FEET.

N = OBSERVATION COUNT.

WAVE DATA FOR THESE TABLES
 WERE SELECTED FROM THE HIGHER
 OF SEA OR SWELL WHEN BOTH
 WERE REPORTED.



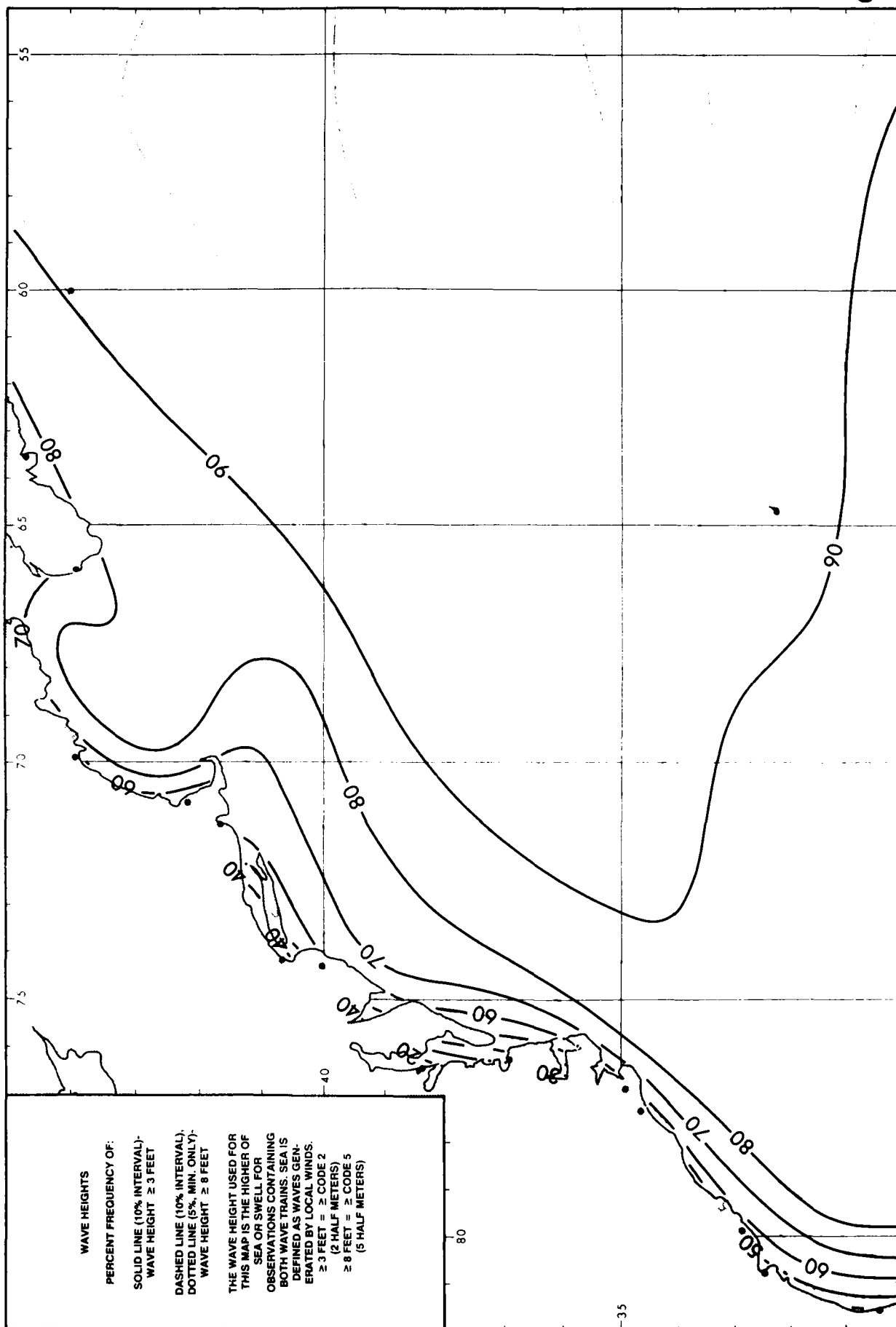
March

Wave Height

[illegible]

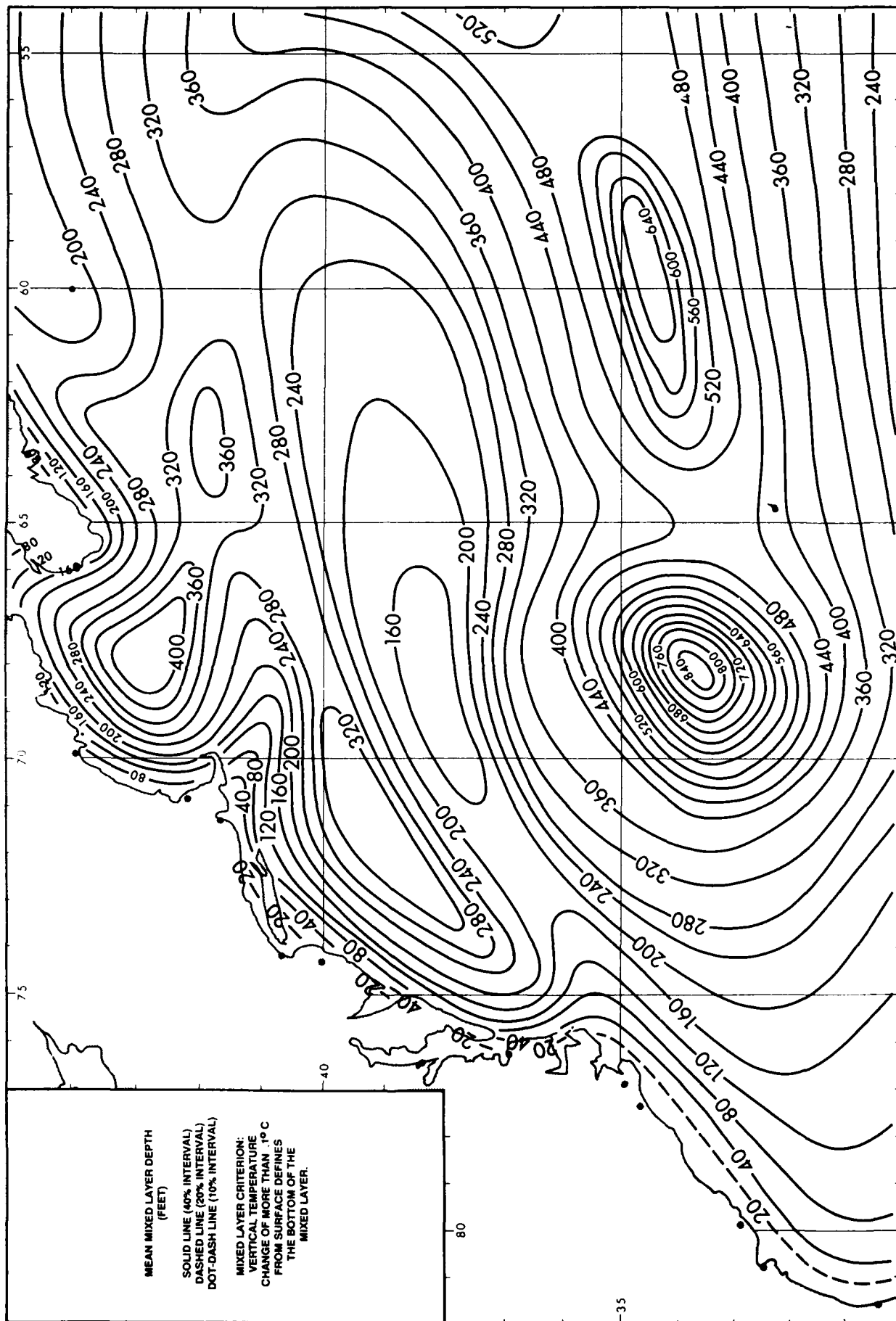
March

Wave Height



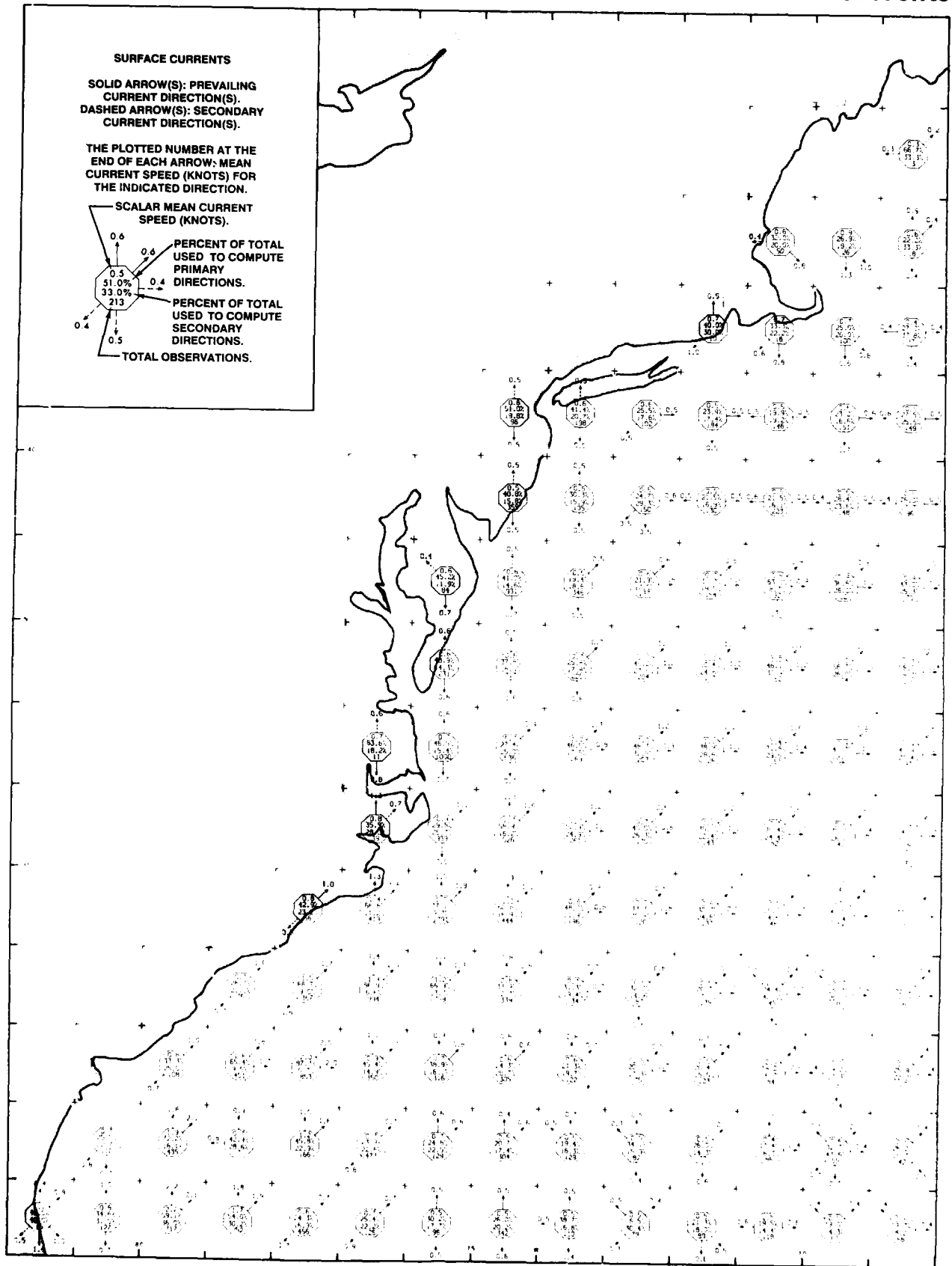
March

Mean Mixed Layer Depth



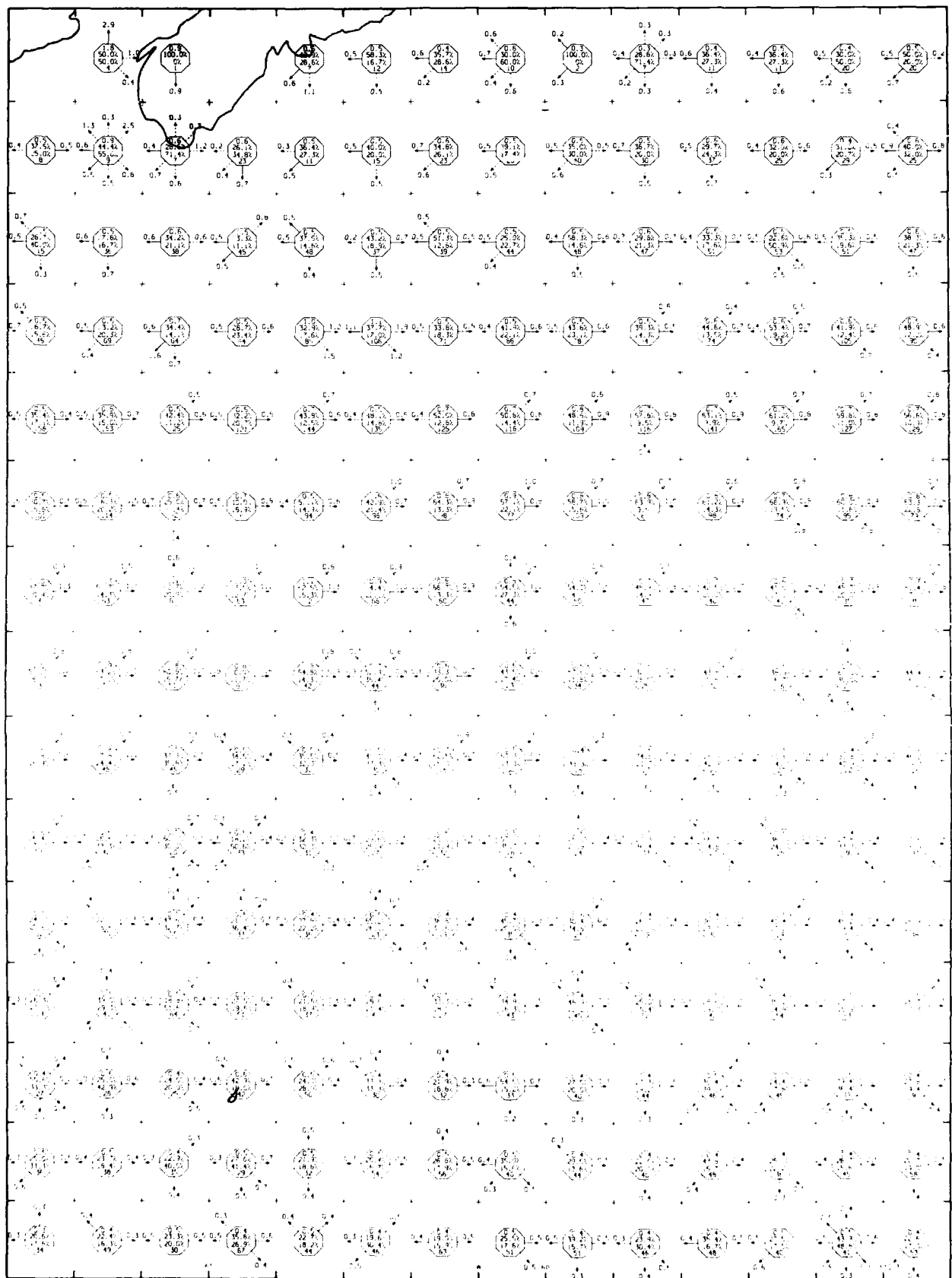
March

Surface Currents



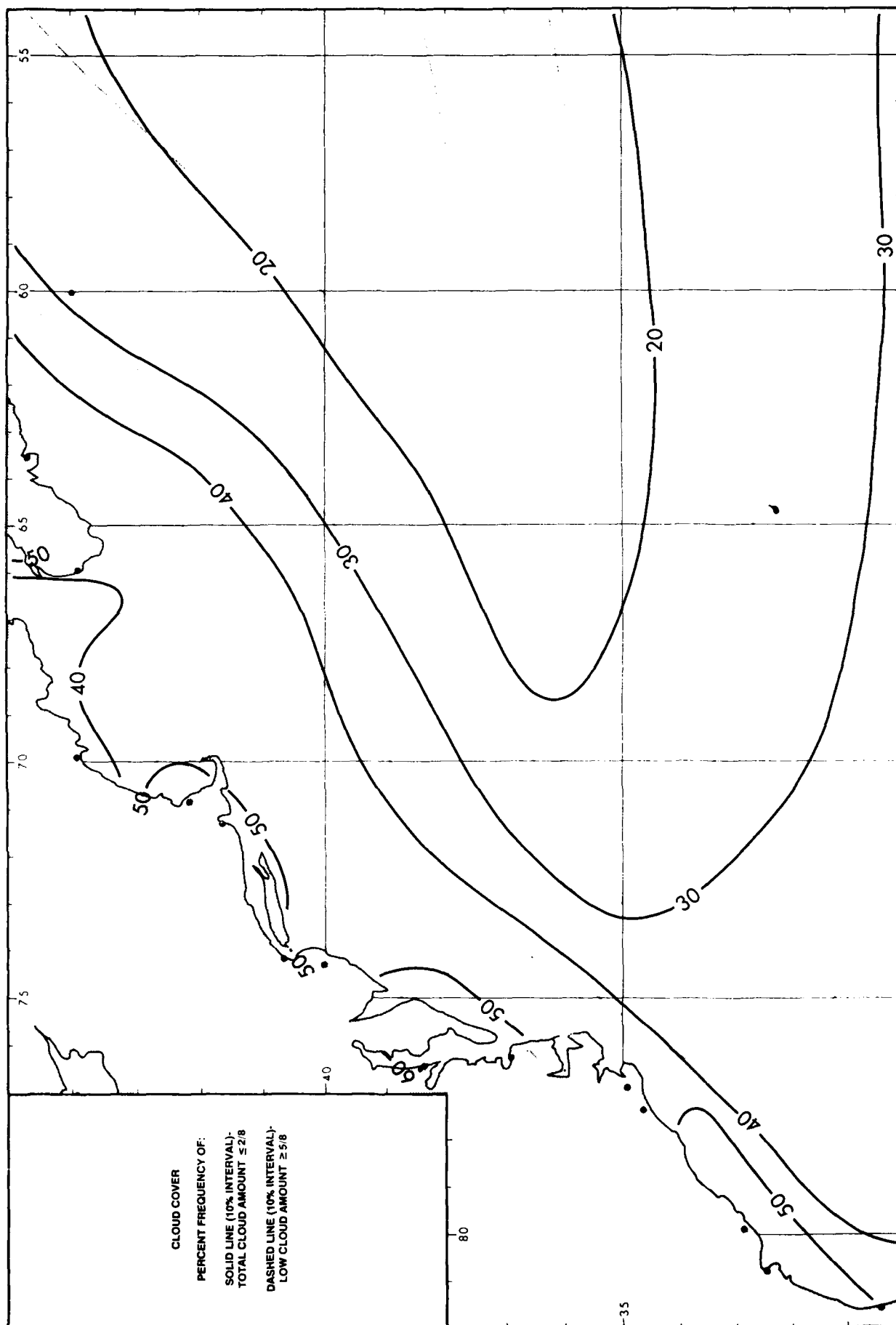
March

Surface Currents



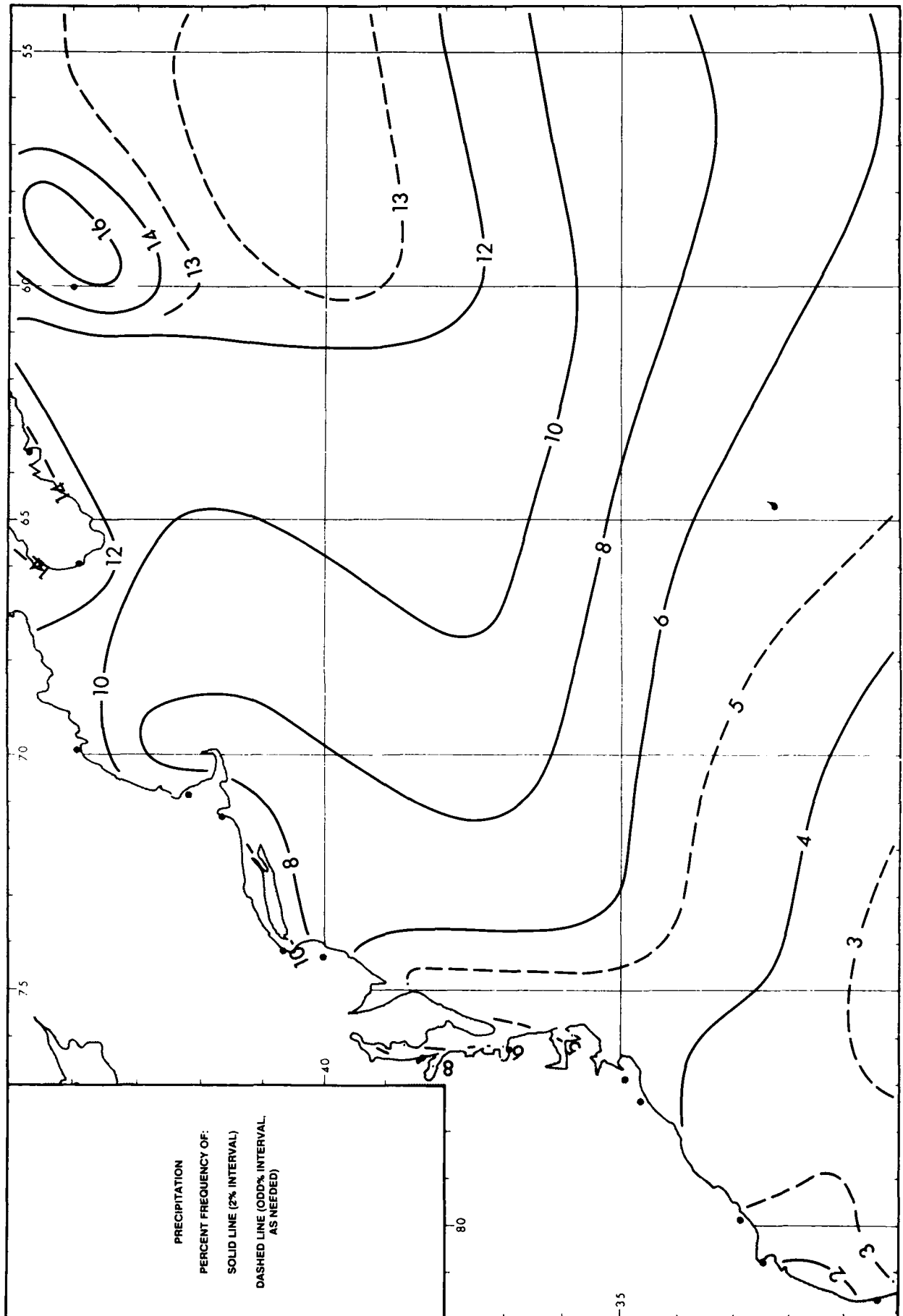
April

Clouds



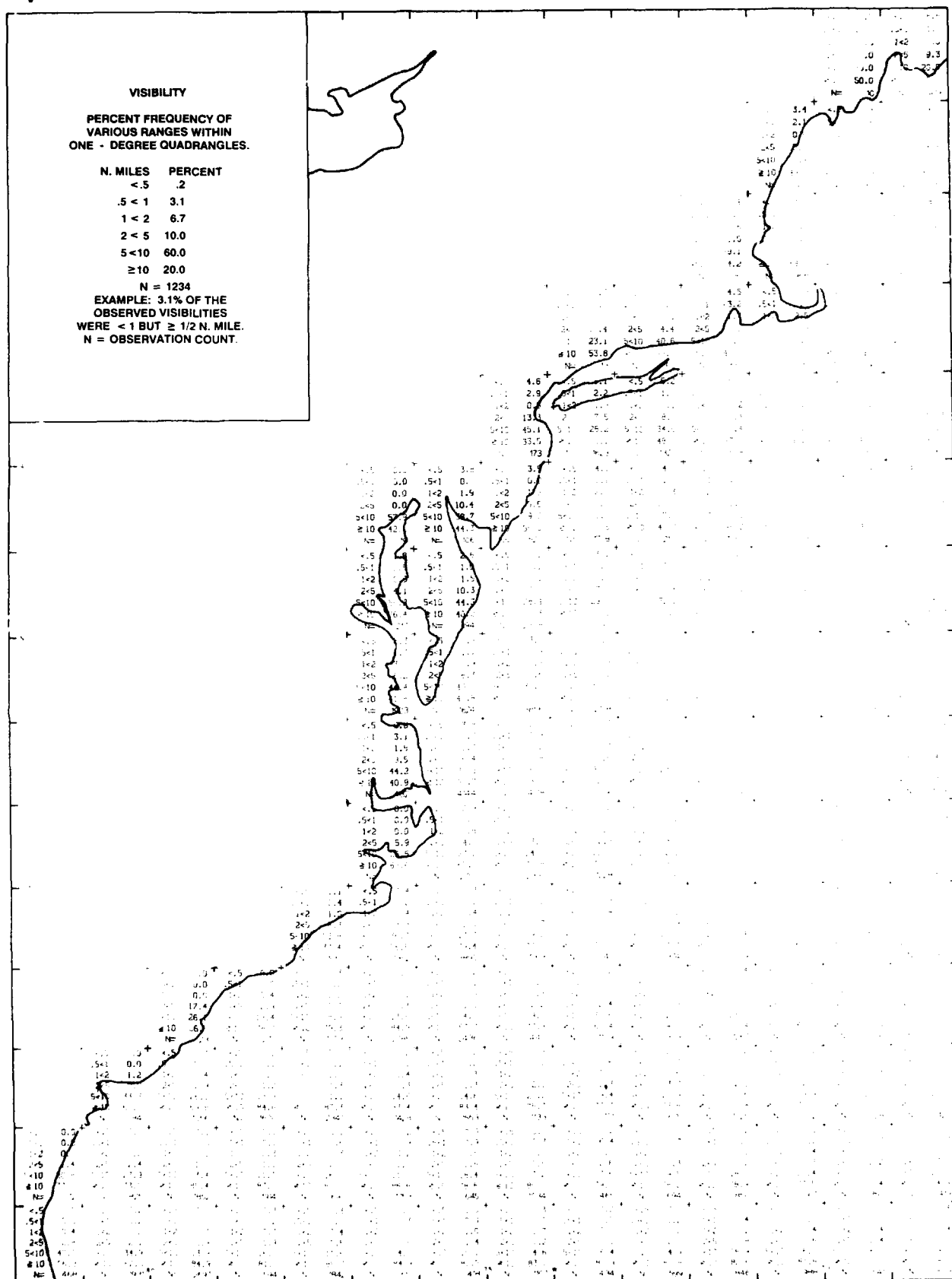
April

Precipitation



April

Visibility



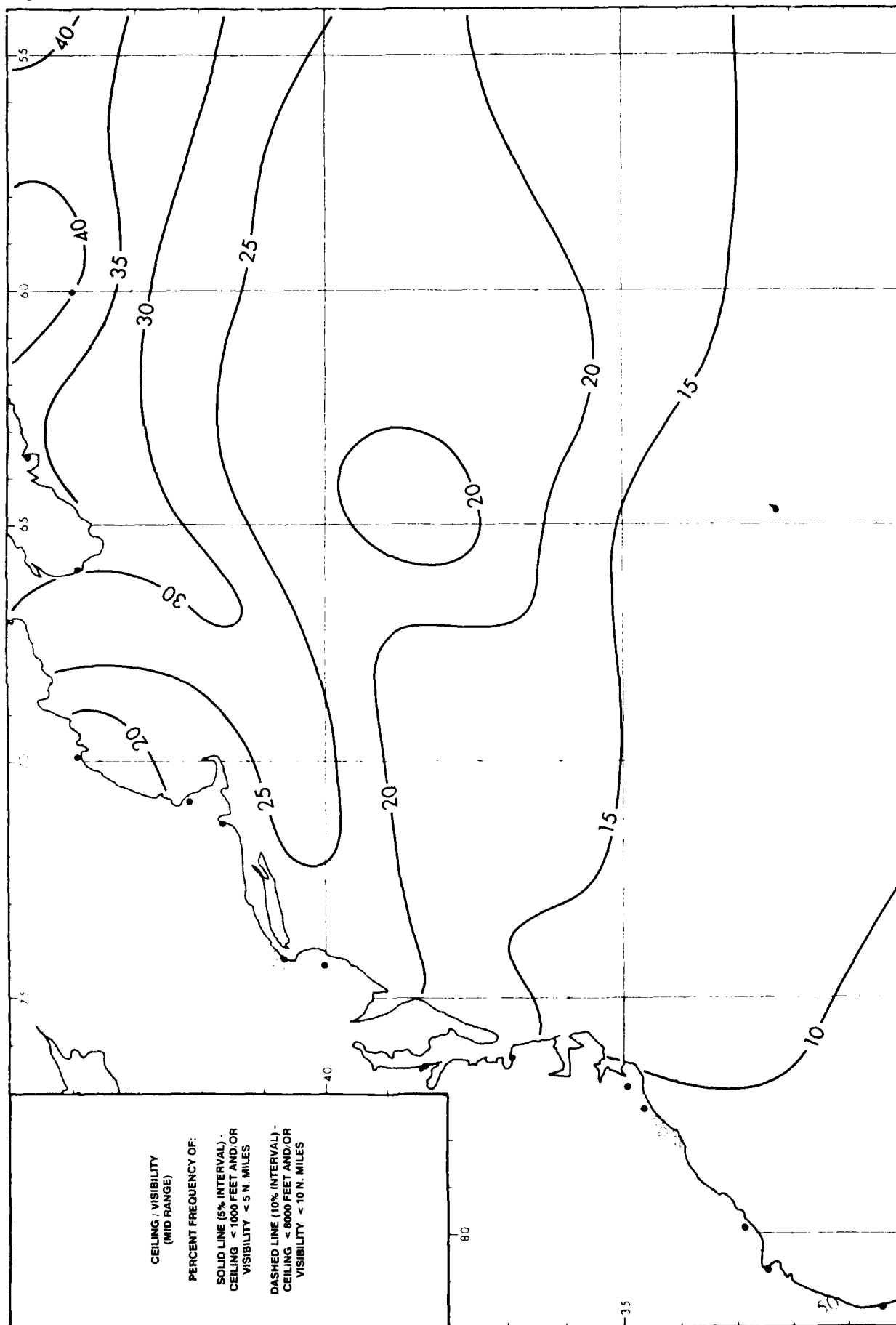
April

Visibility

[illegible]

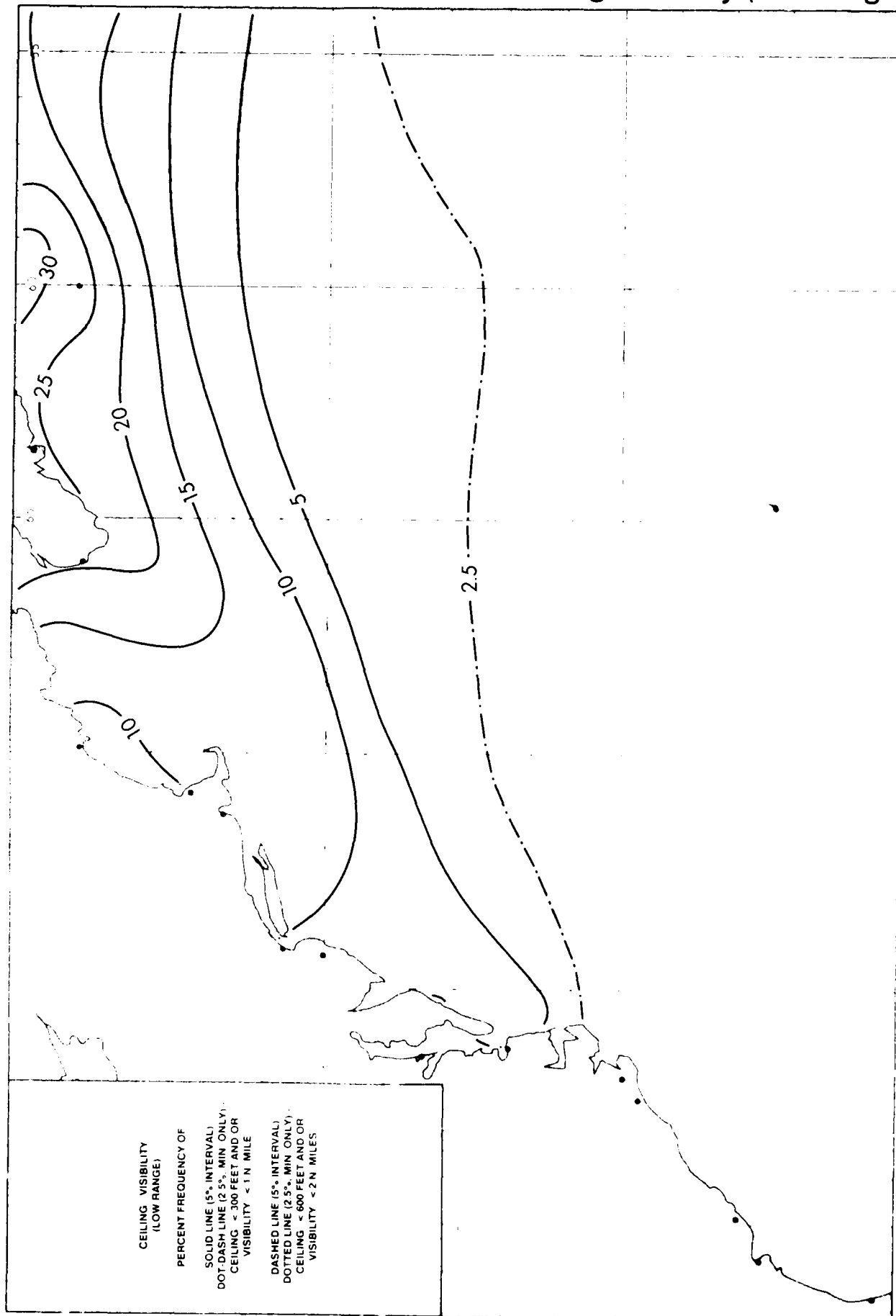
April

Ceiling/Visibility (Mid Range)



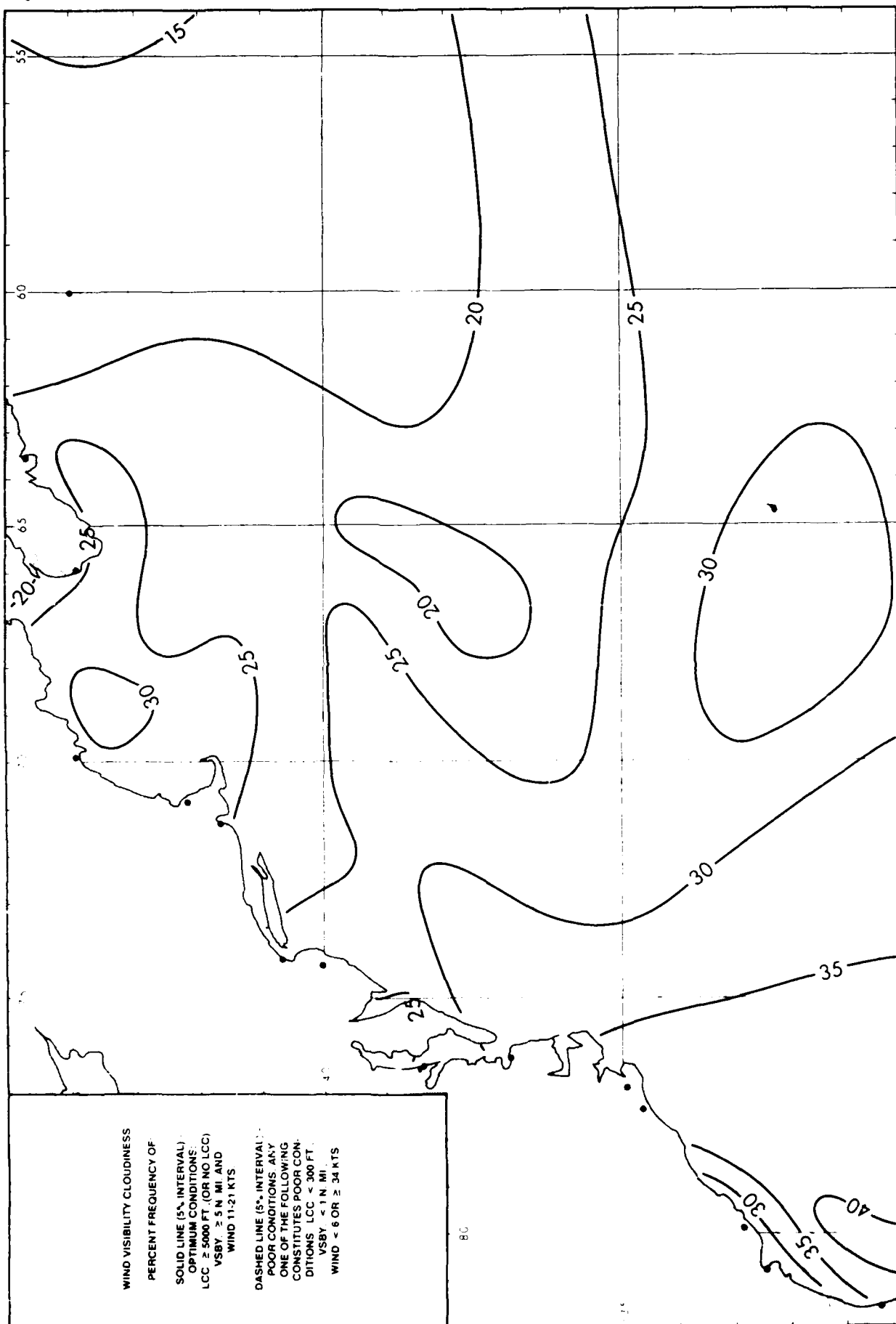
April

Ceiling / Visibility (Low Range)



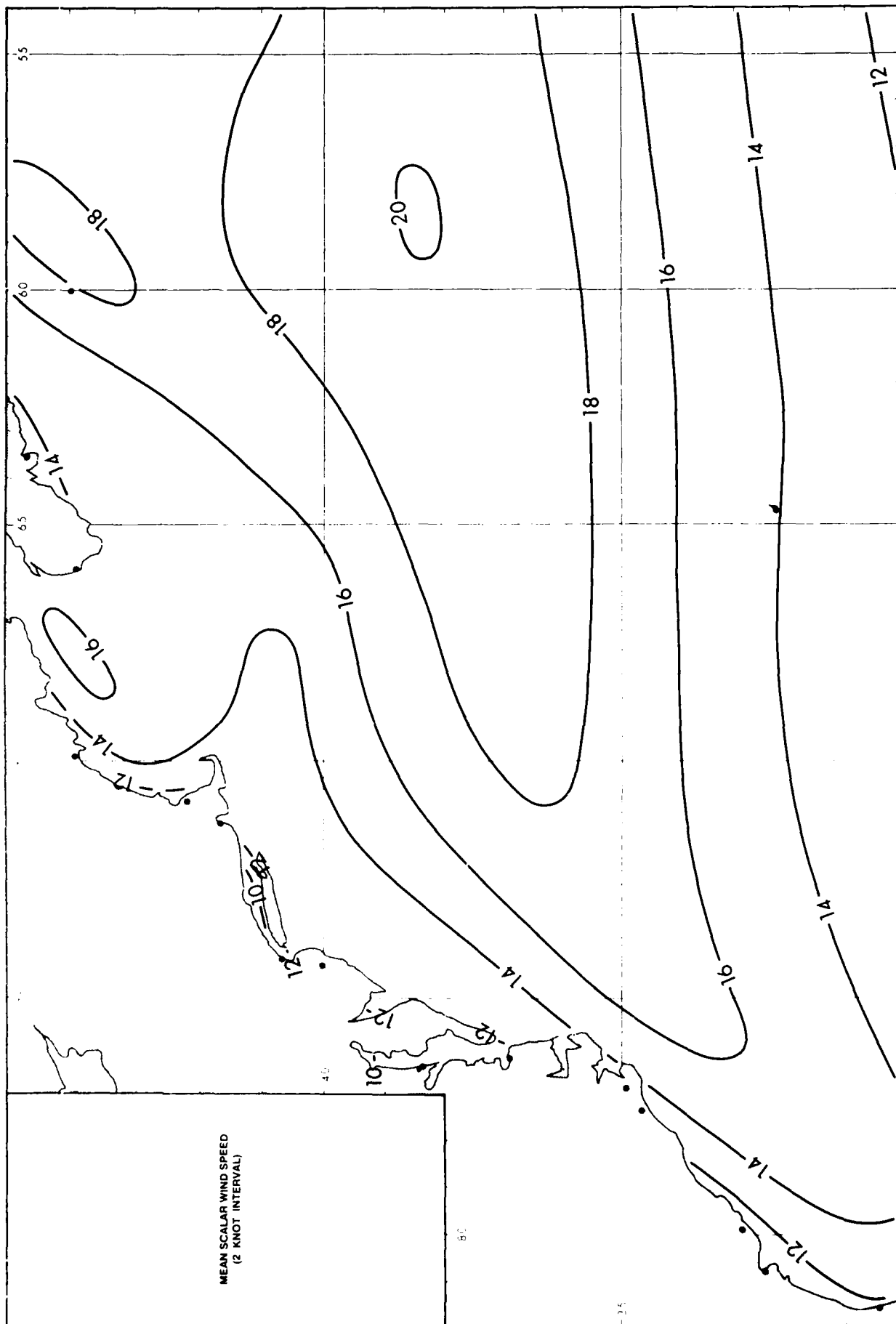
April

Wind / Visibility / Cloudiness



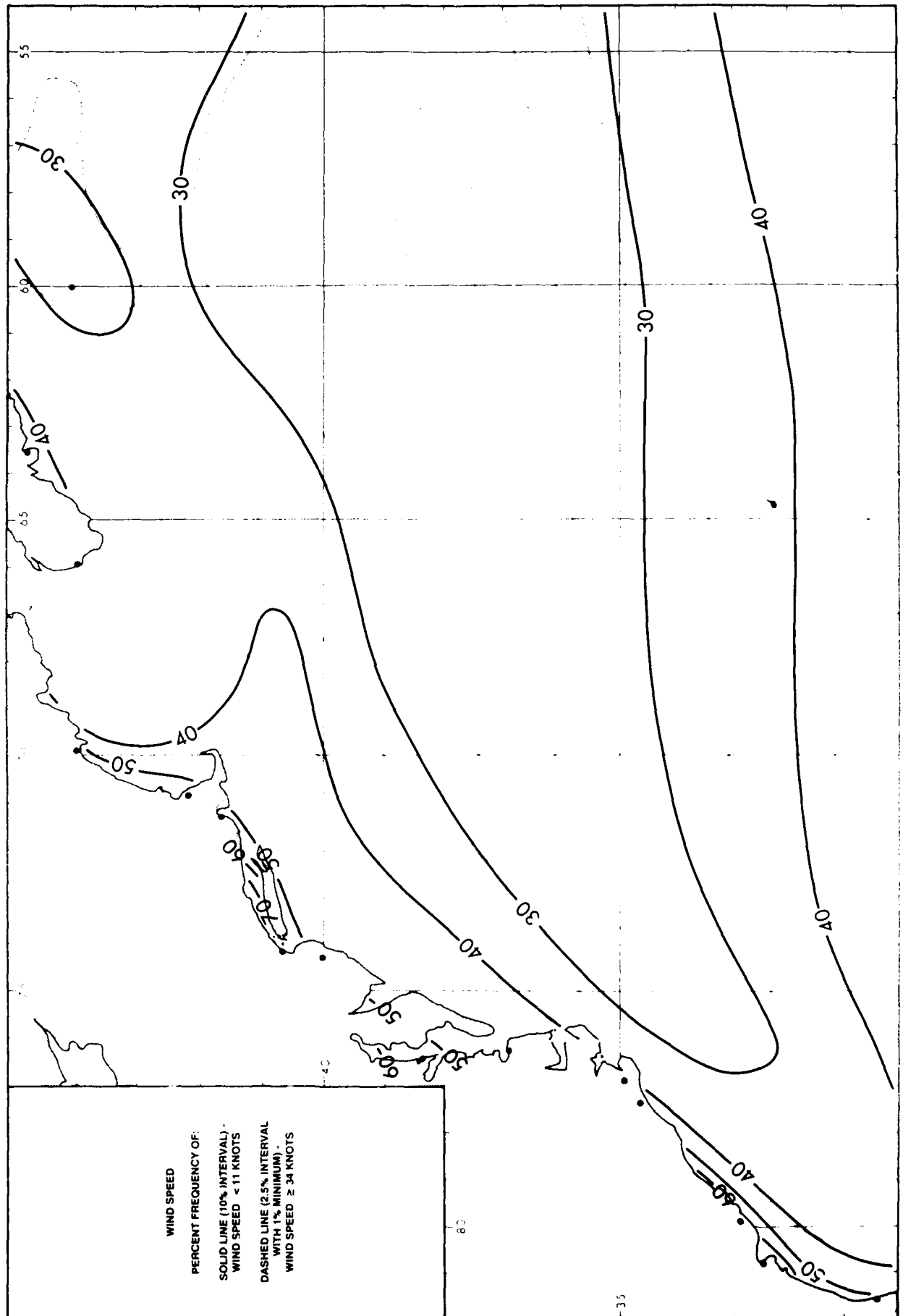
April

Mean Scalar Wind Speed



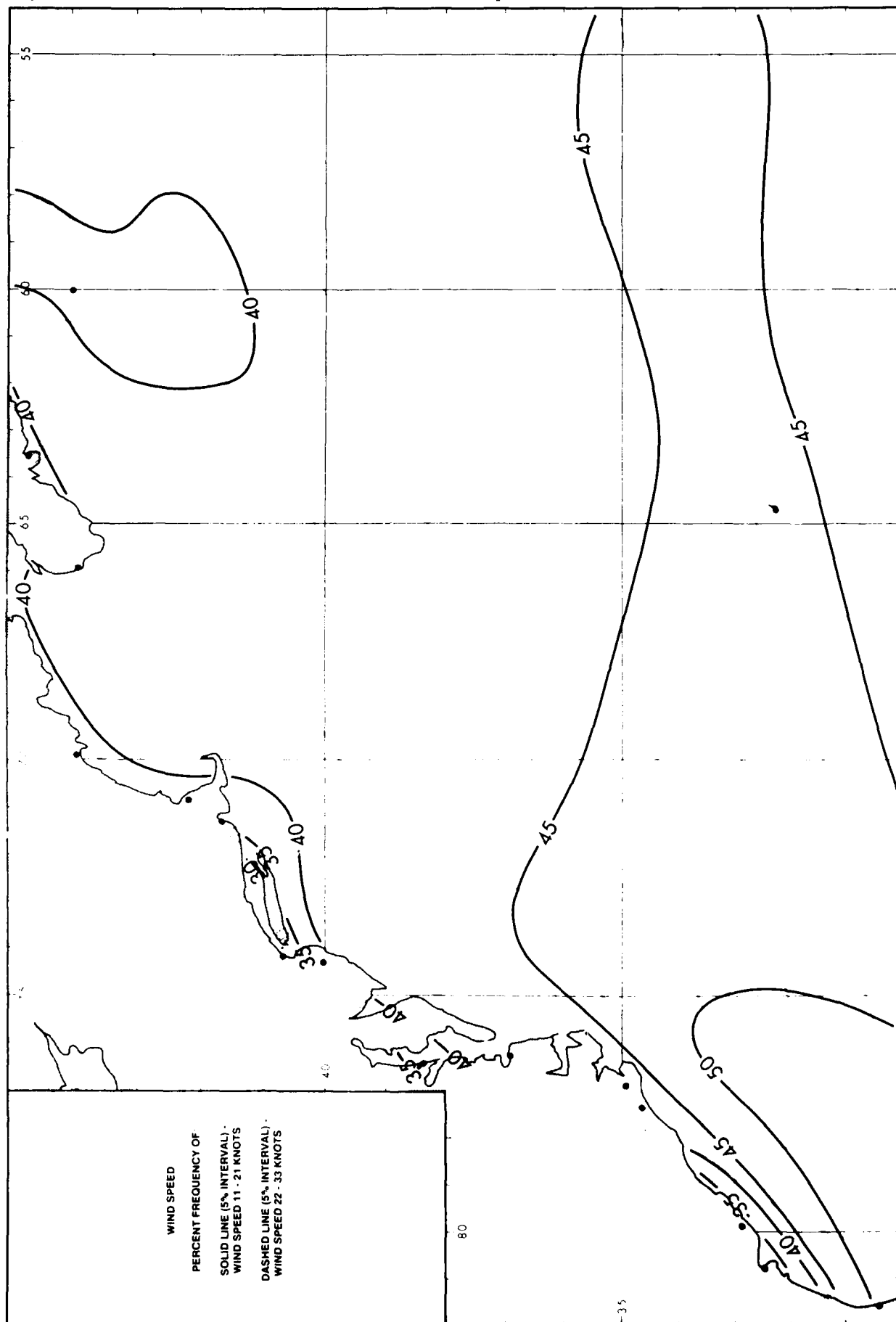
April

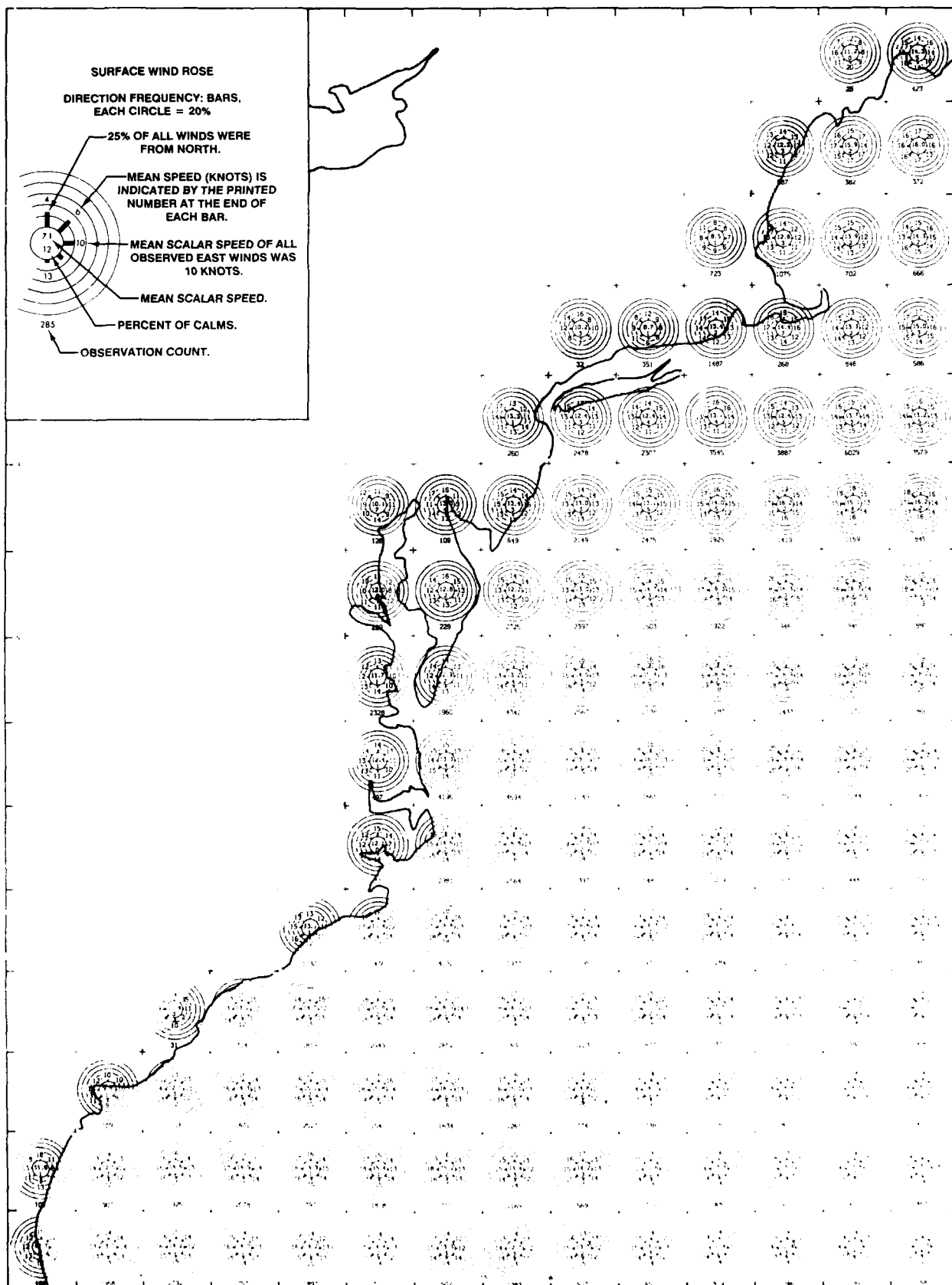
Wind Speed <11 and ≥ 34 Knots



April

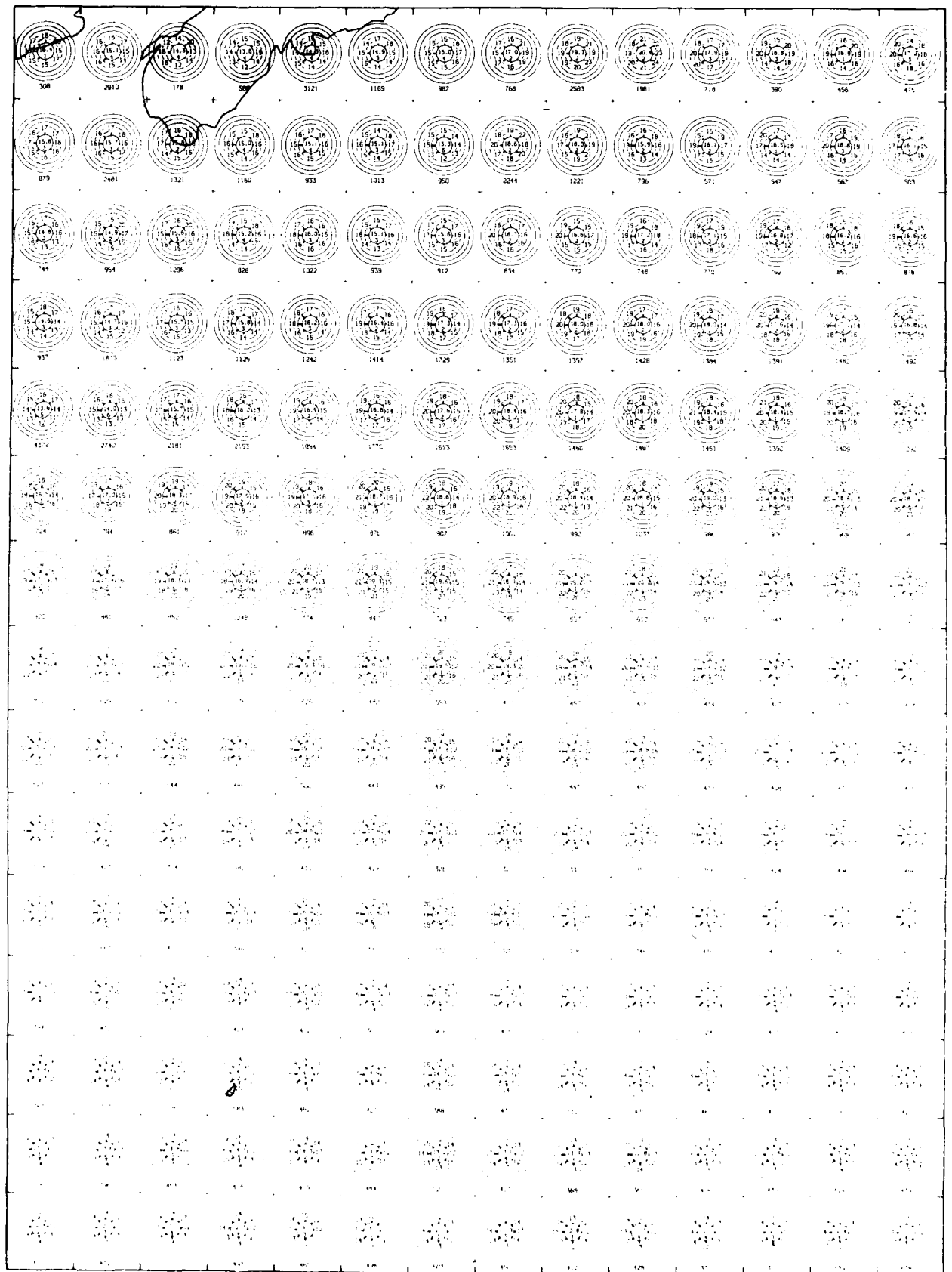
Wind Speed 11 - 21 and 22 - 33 Knots





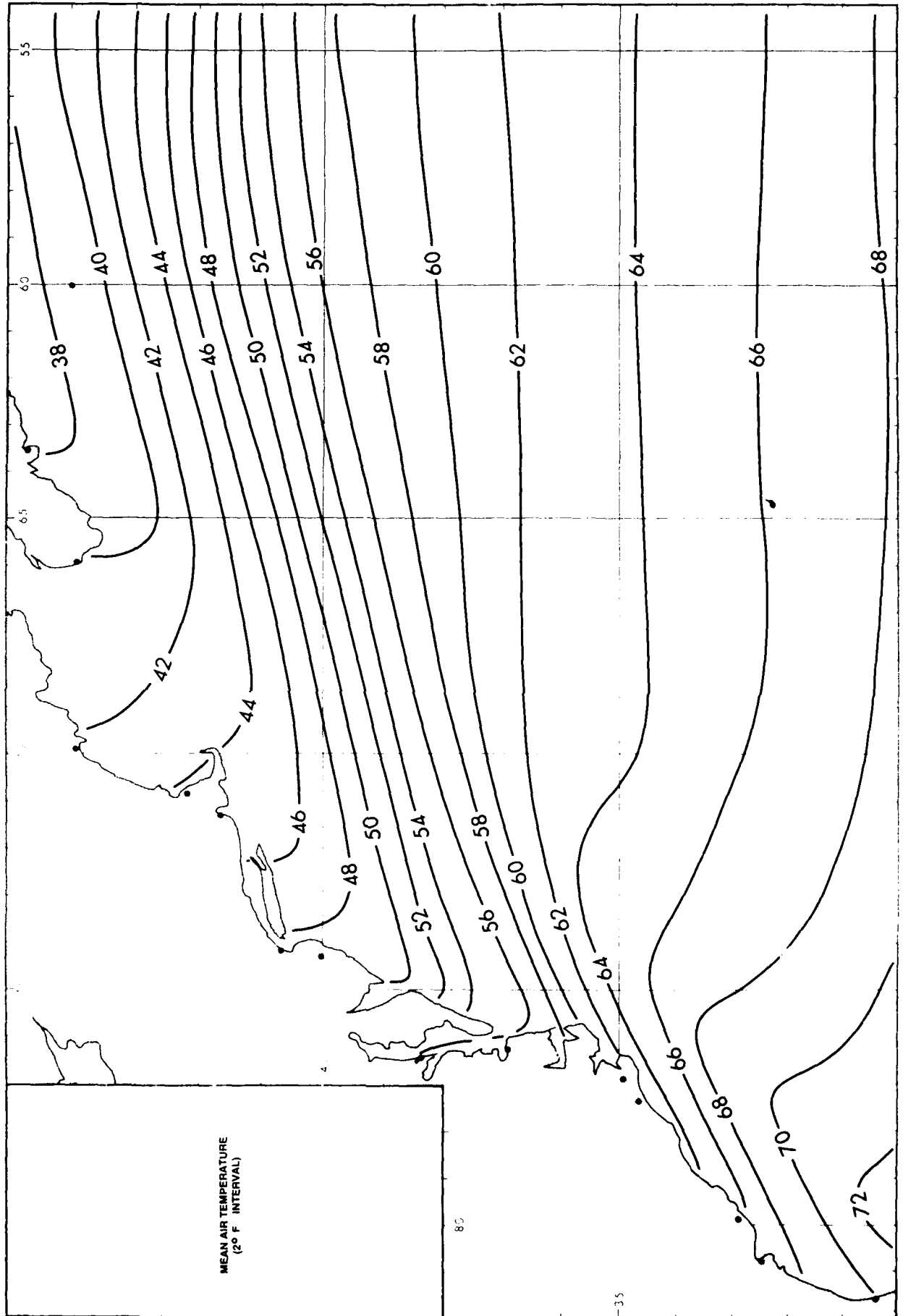
April

Surface Wind Roses



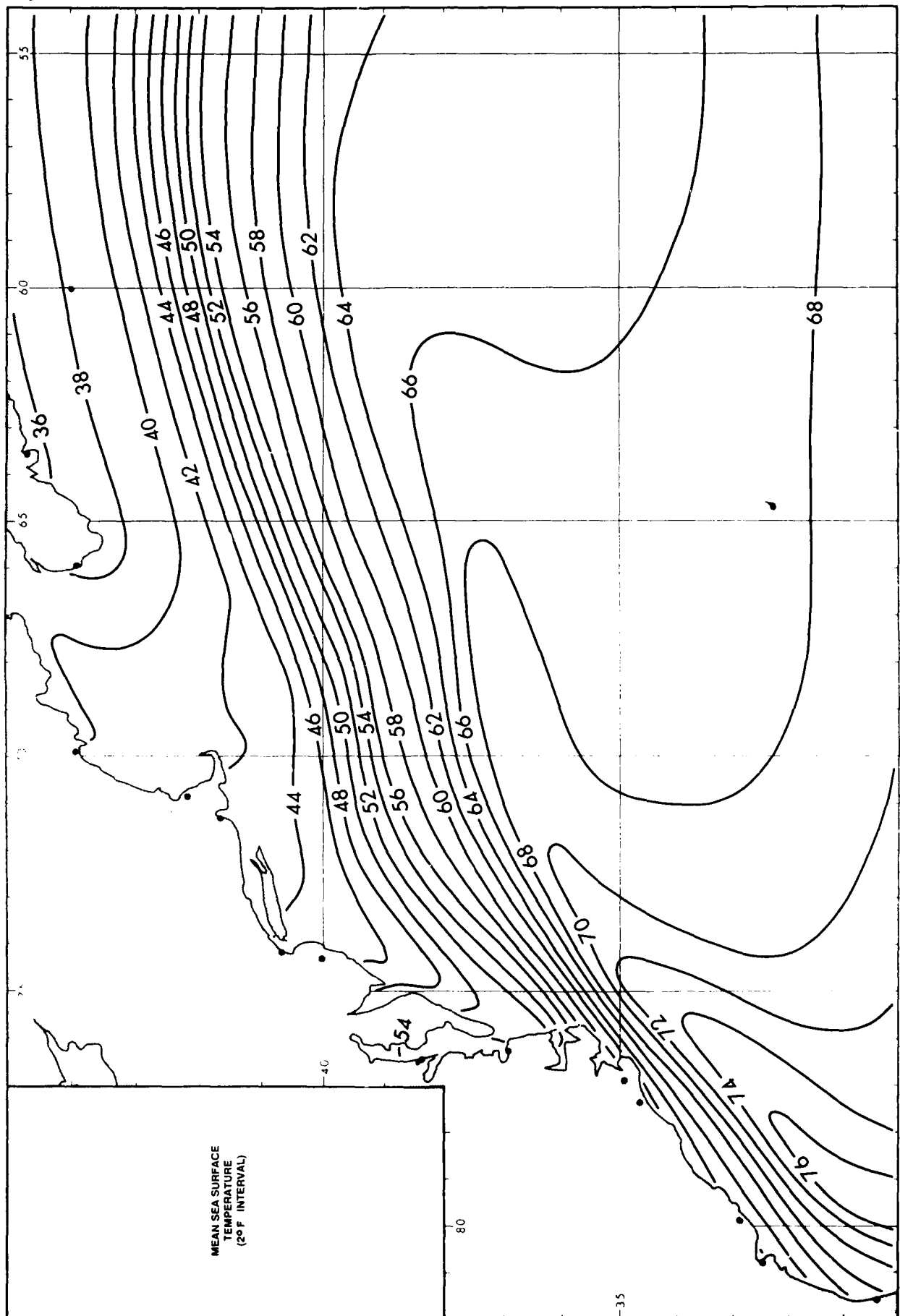
April

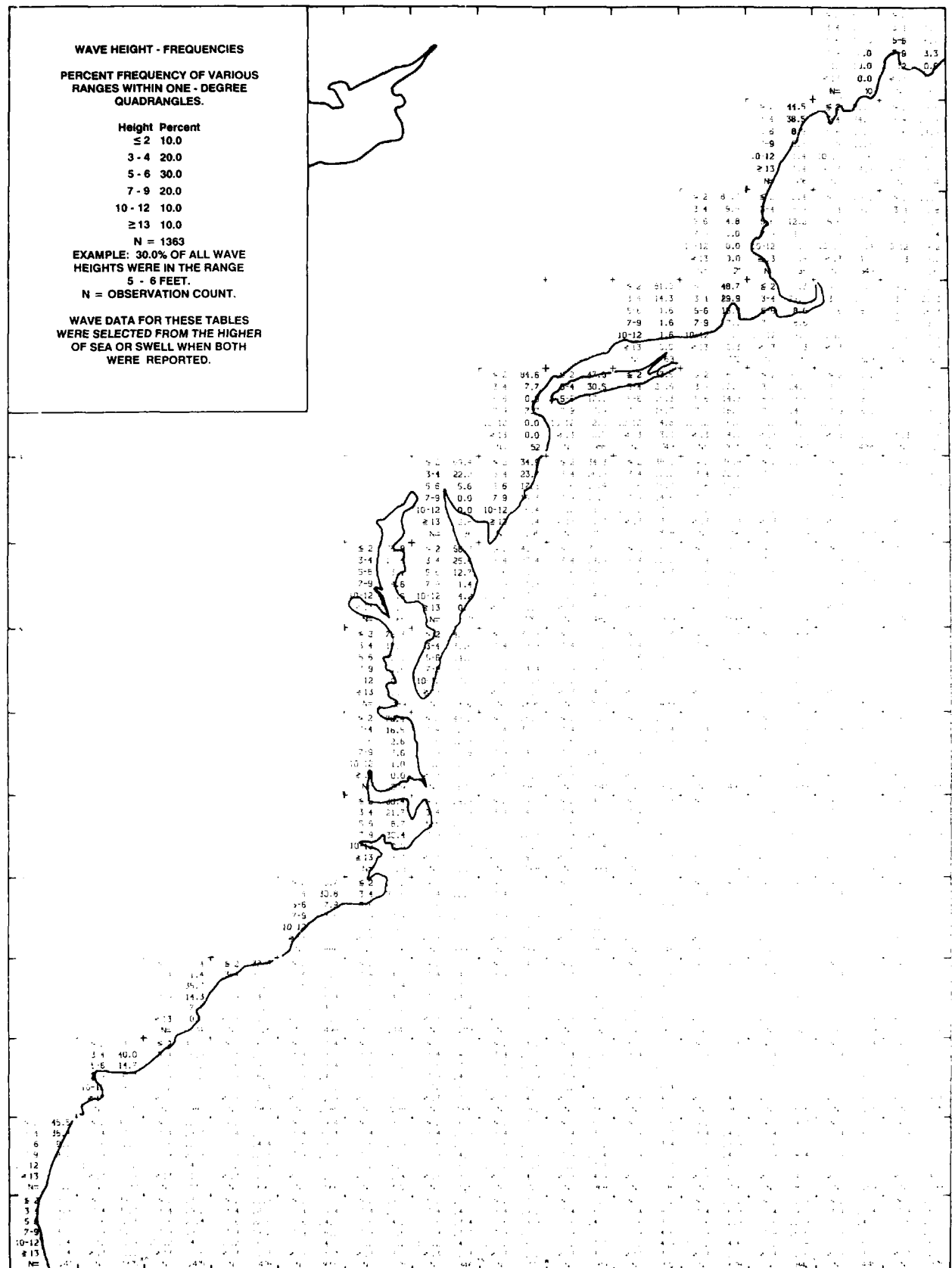
Mean Air Temperature



April

Mean Sea Surface Temperature





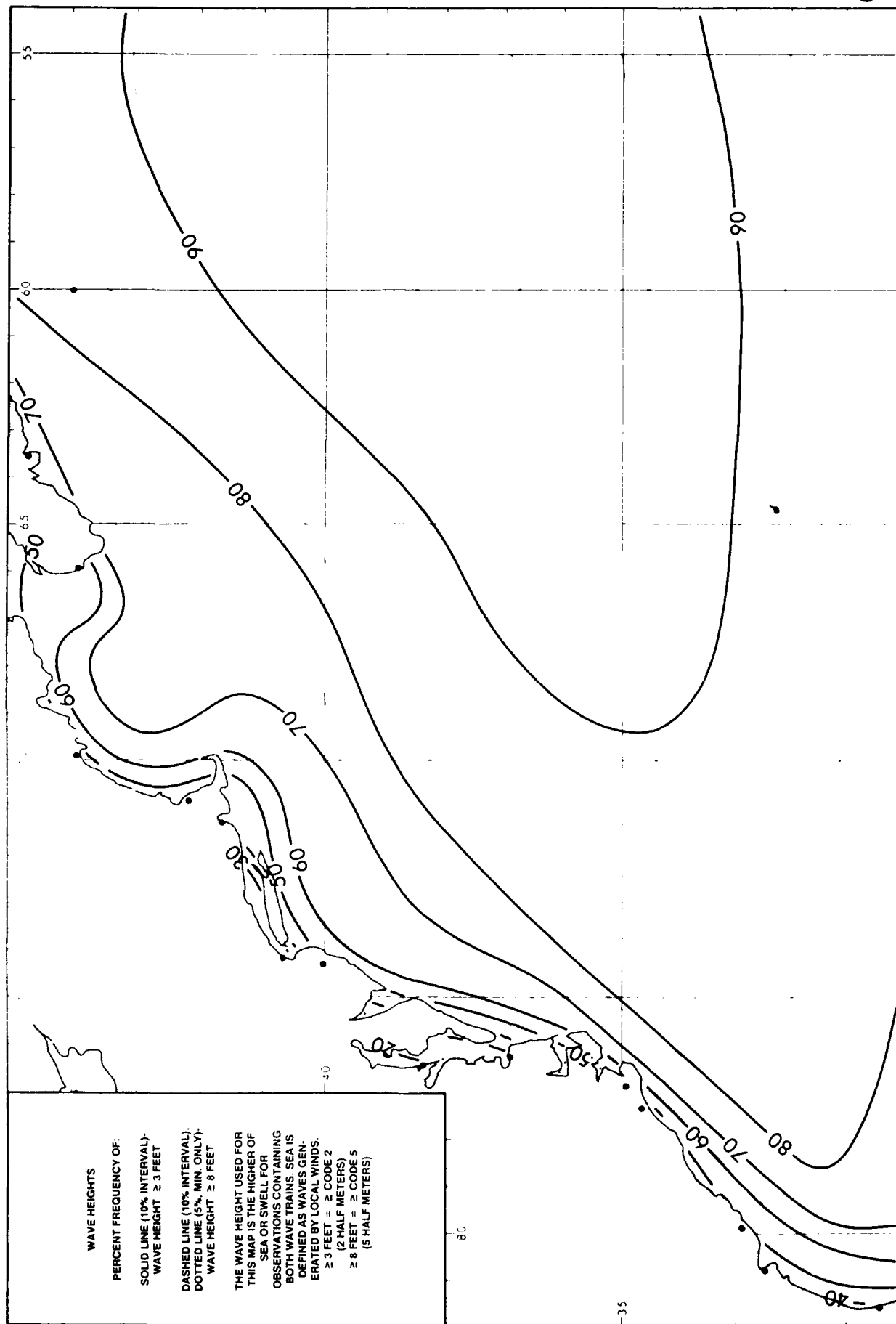
April

Wave Height

[illegible]

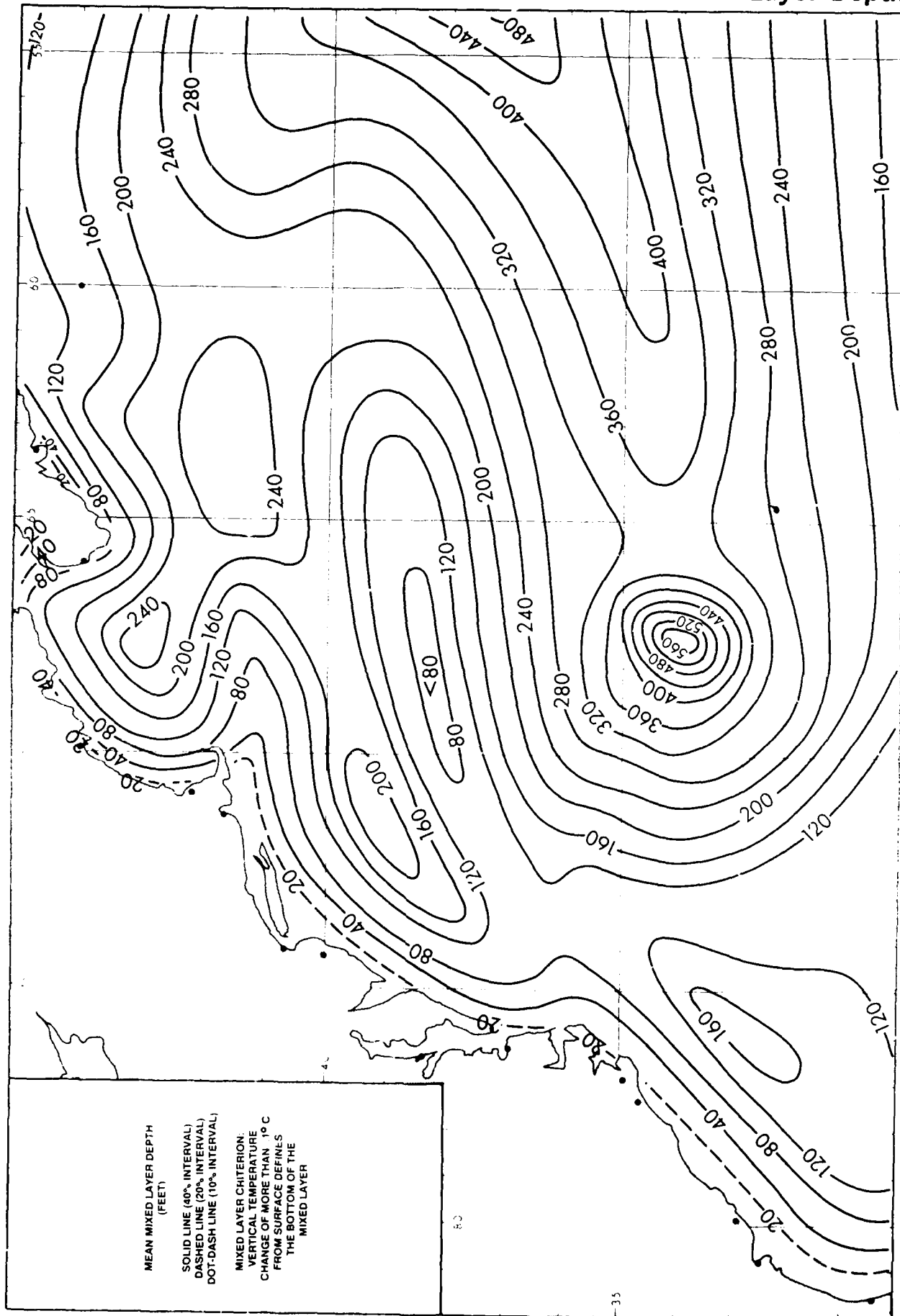
April

Wave Height



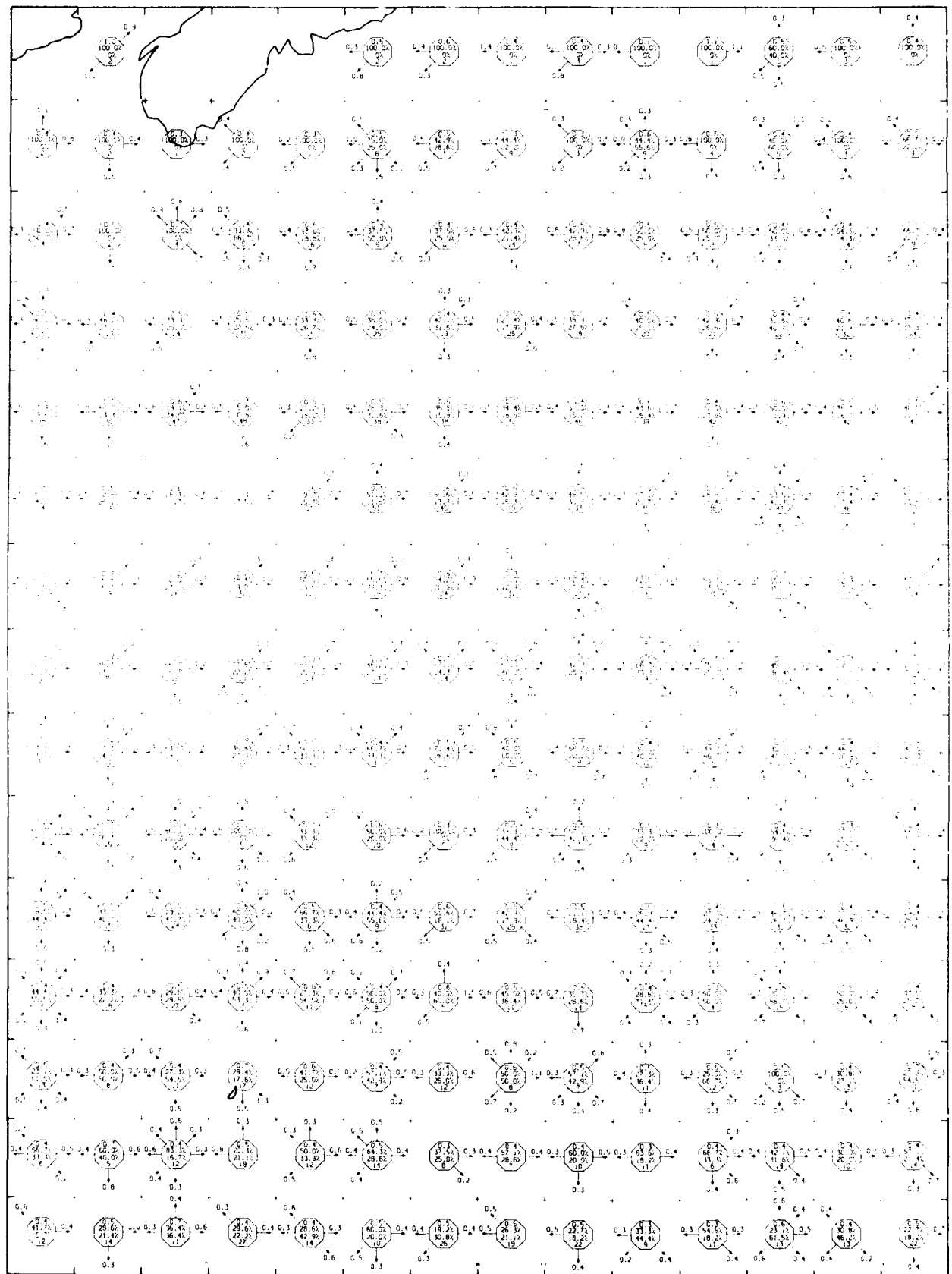
April

Mean Mixed Layer Depth



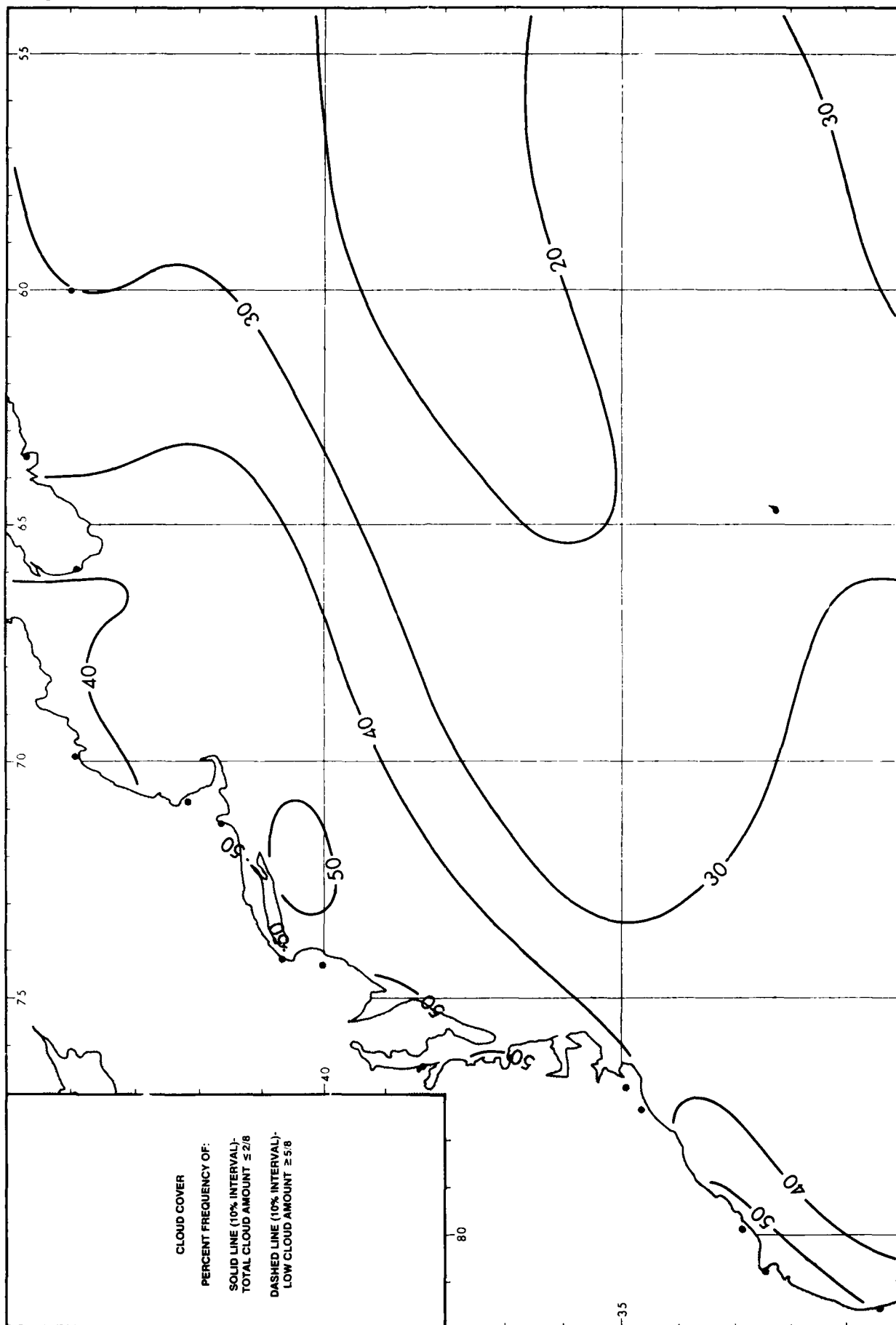
April

Surface Currents



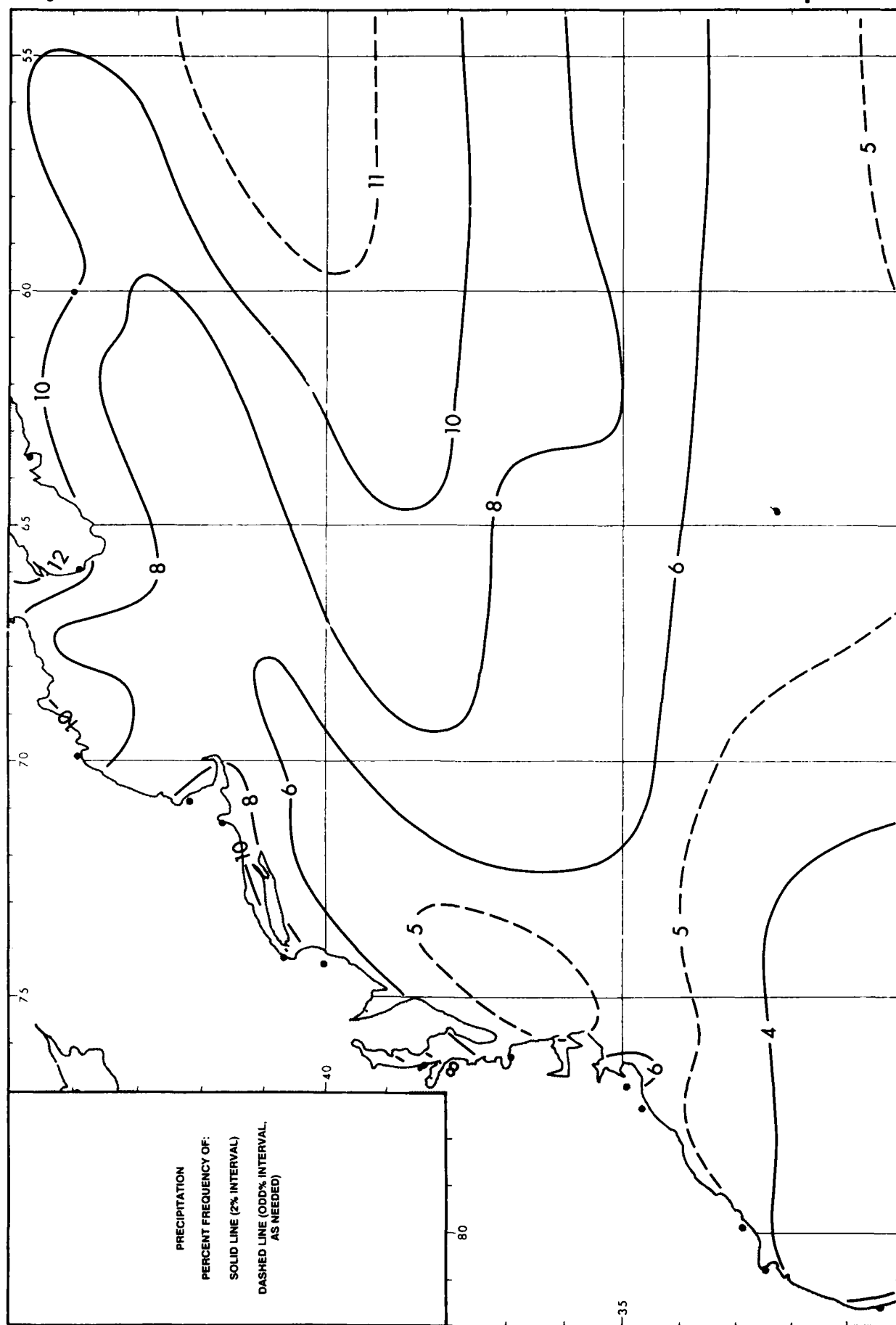
May

Clouds



May

Precipitation



May

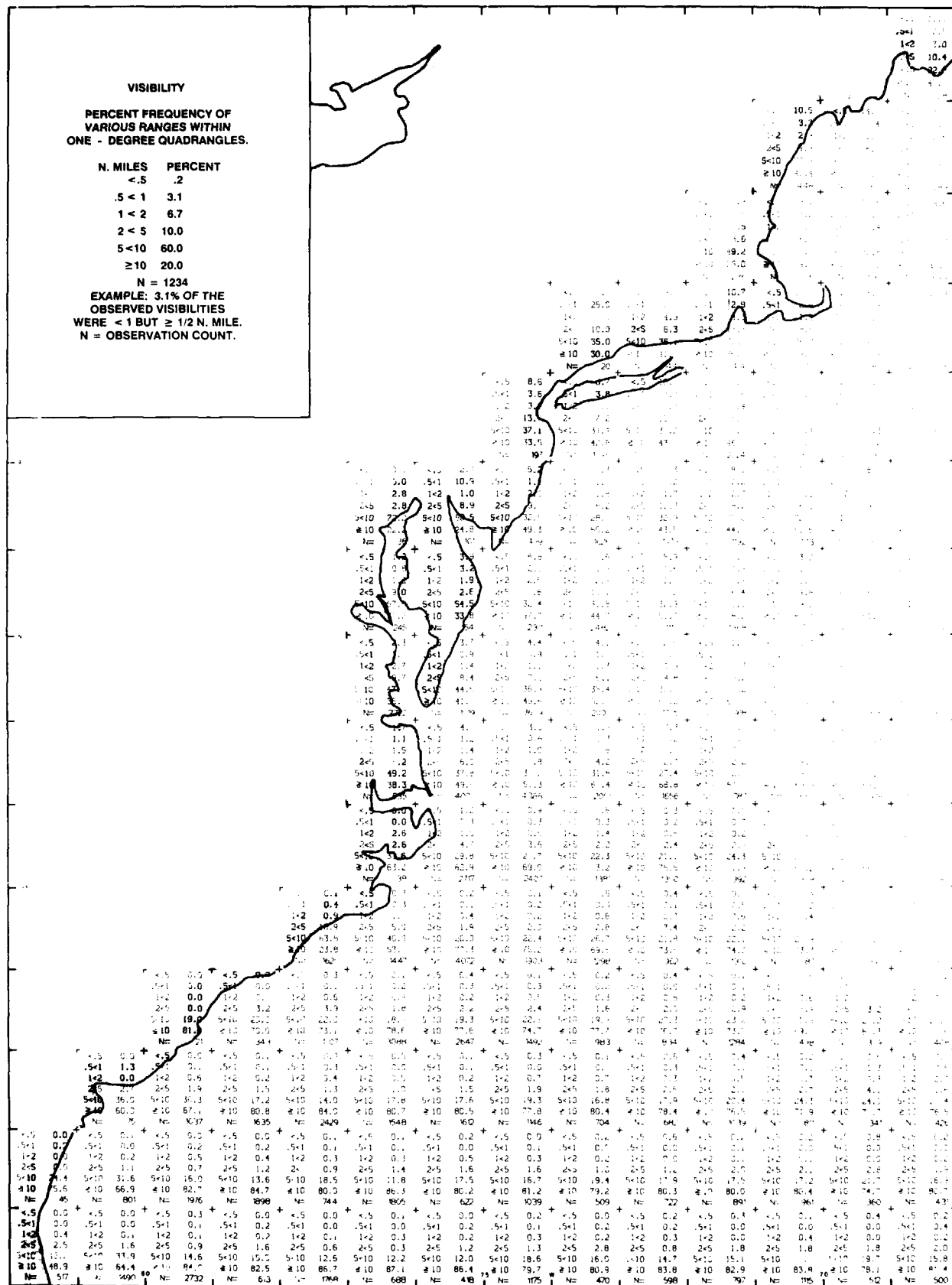
Visibility

VISIBILITY
PERCENT FREQUENCY OF
VARIOUS RANGES WITHIN
ONE - DEGREE QUADRANGLES.

N. MILES	PERCENT
<.5	.2
.5 < 1	3.1
1 < 2	6.7
2 < 5	10.0
5 < 10	60.0
≥ 10	20.0

N = 1234

EXAMPLE: 3.1% OF THE
OBSERVED VISIBILITIES
WERE < 1 BUT ≥ 1/2 N. MILE.
N = OBSERVATION COUNT.

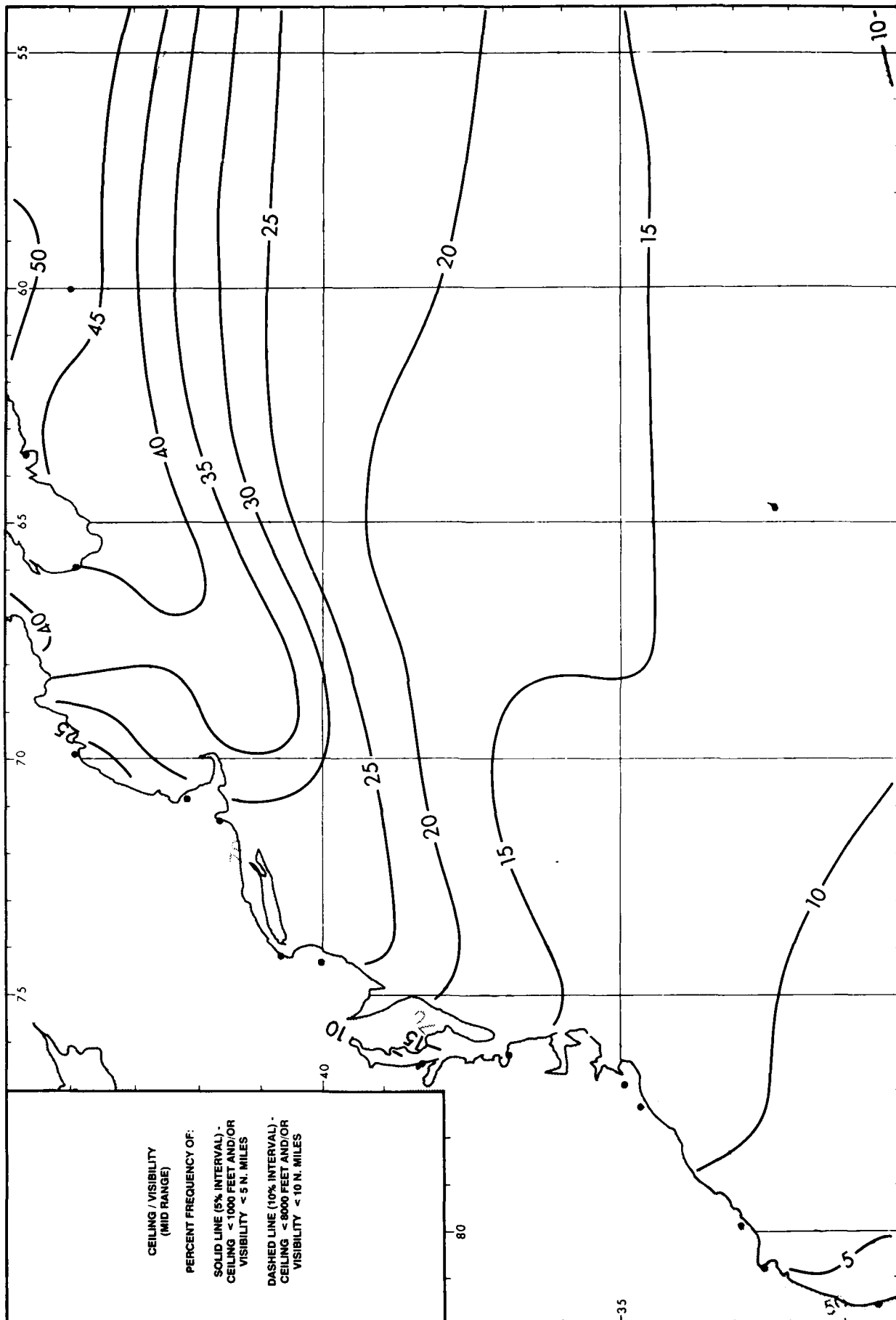


Visibility

85

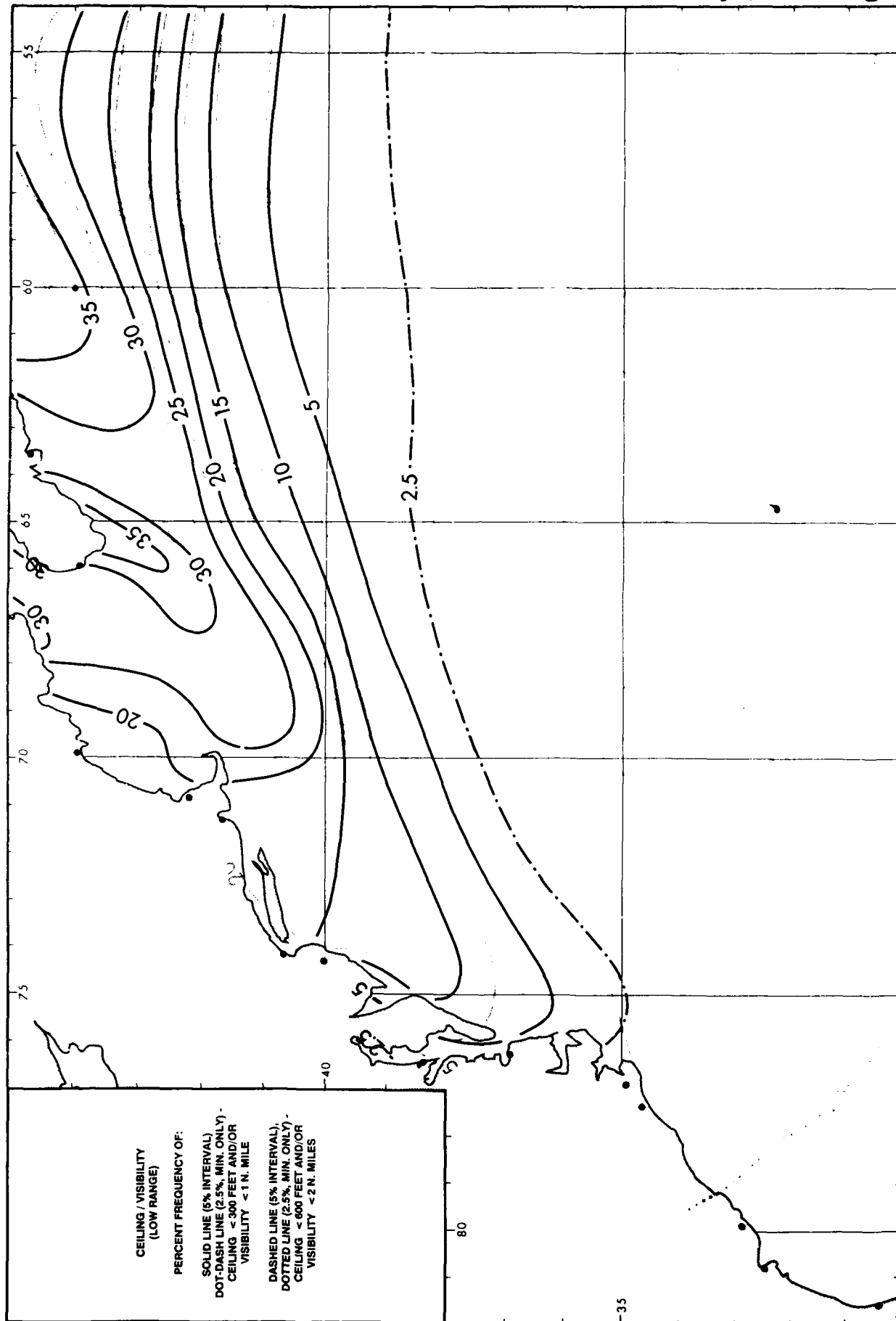
May

Ceiling / Visibility (Mid Range)



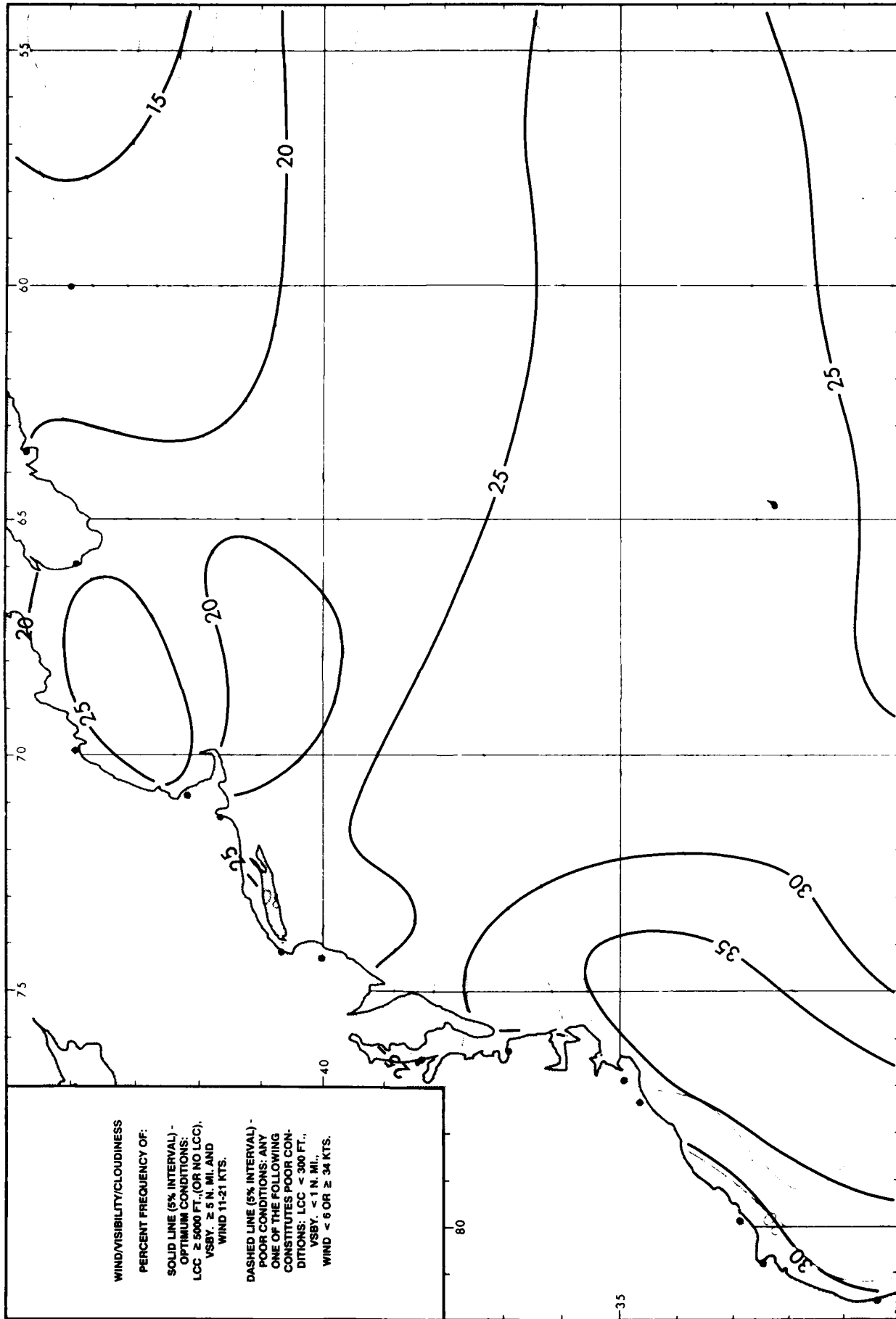
May

Ceiling / Visibility (Low Range)



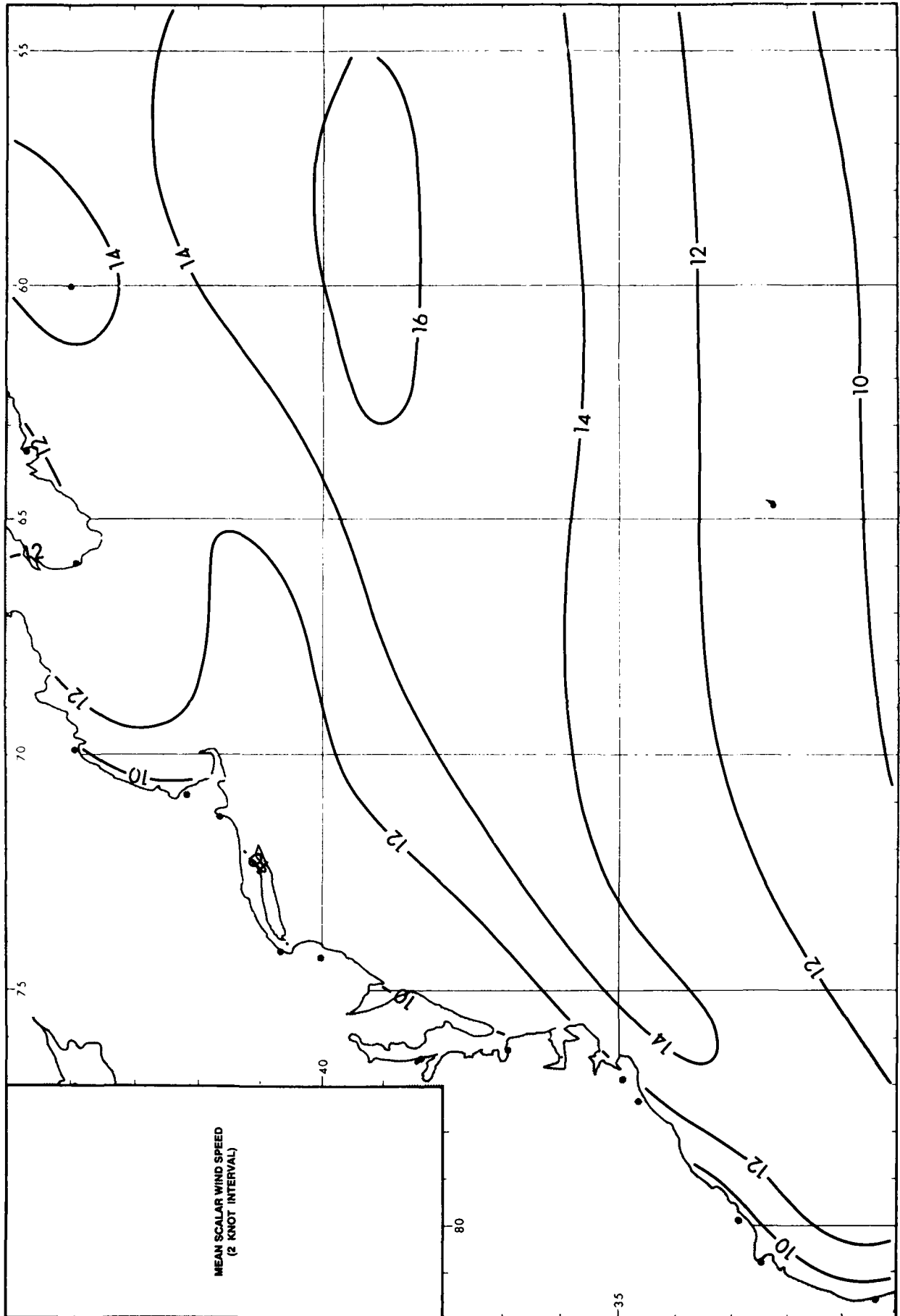
May

Wind / Visibility / Cloudiness



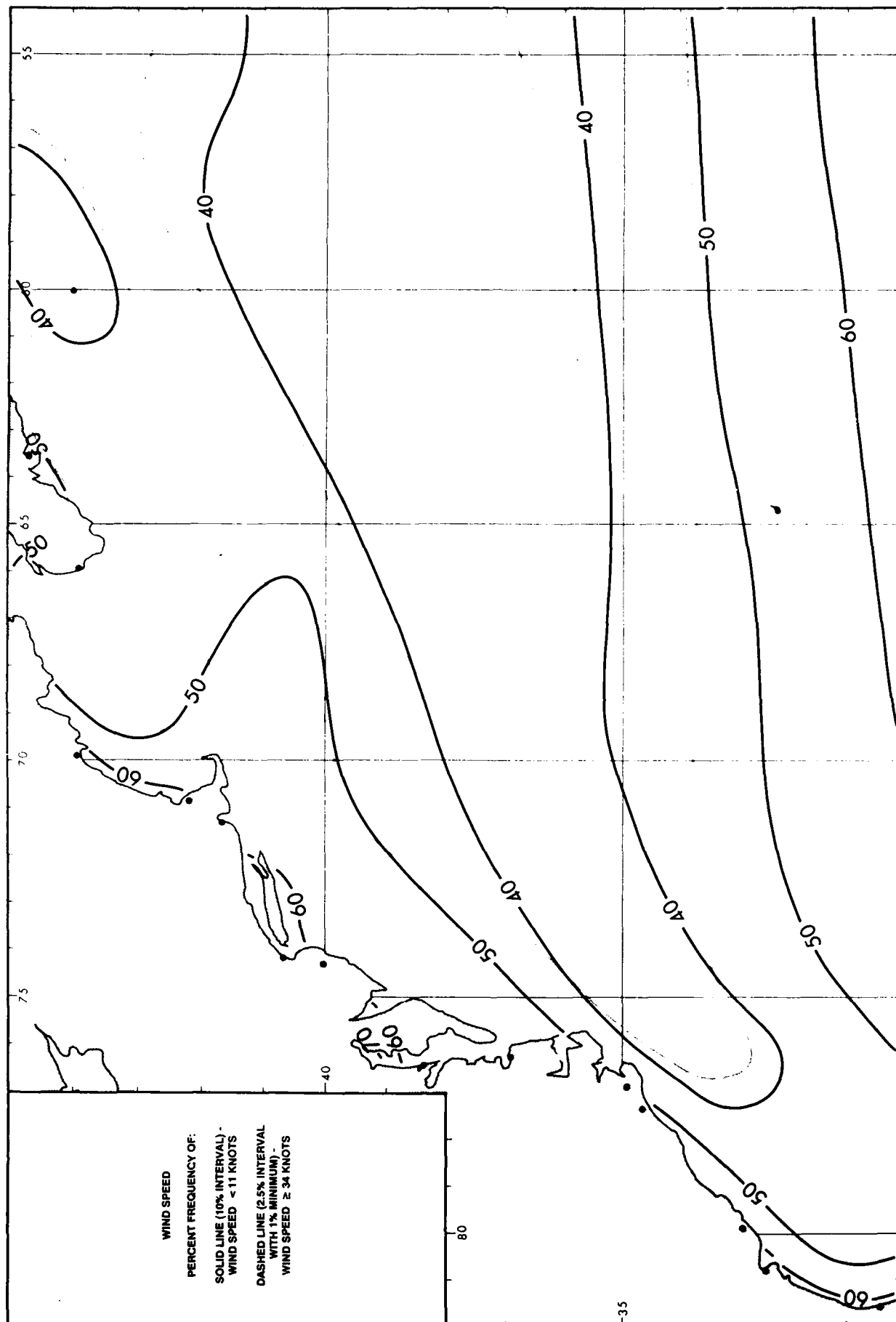
May

Mean Scalar Wind Speed



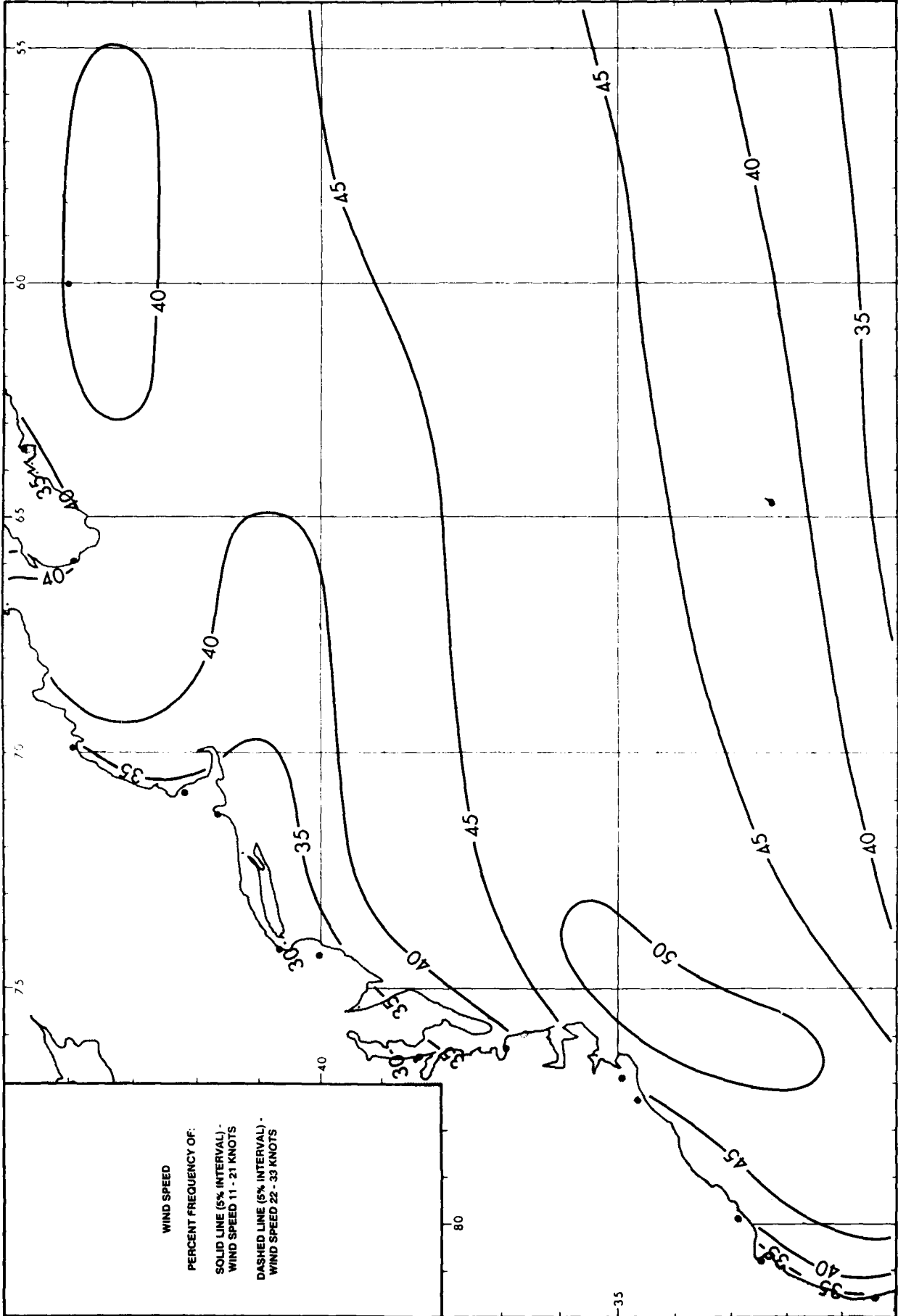
May

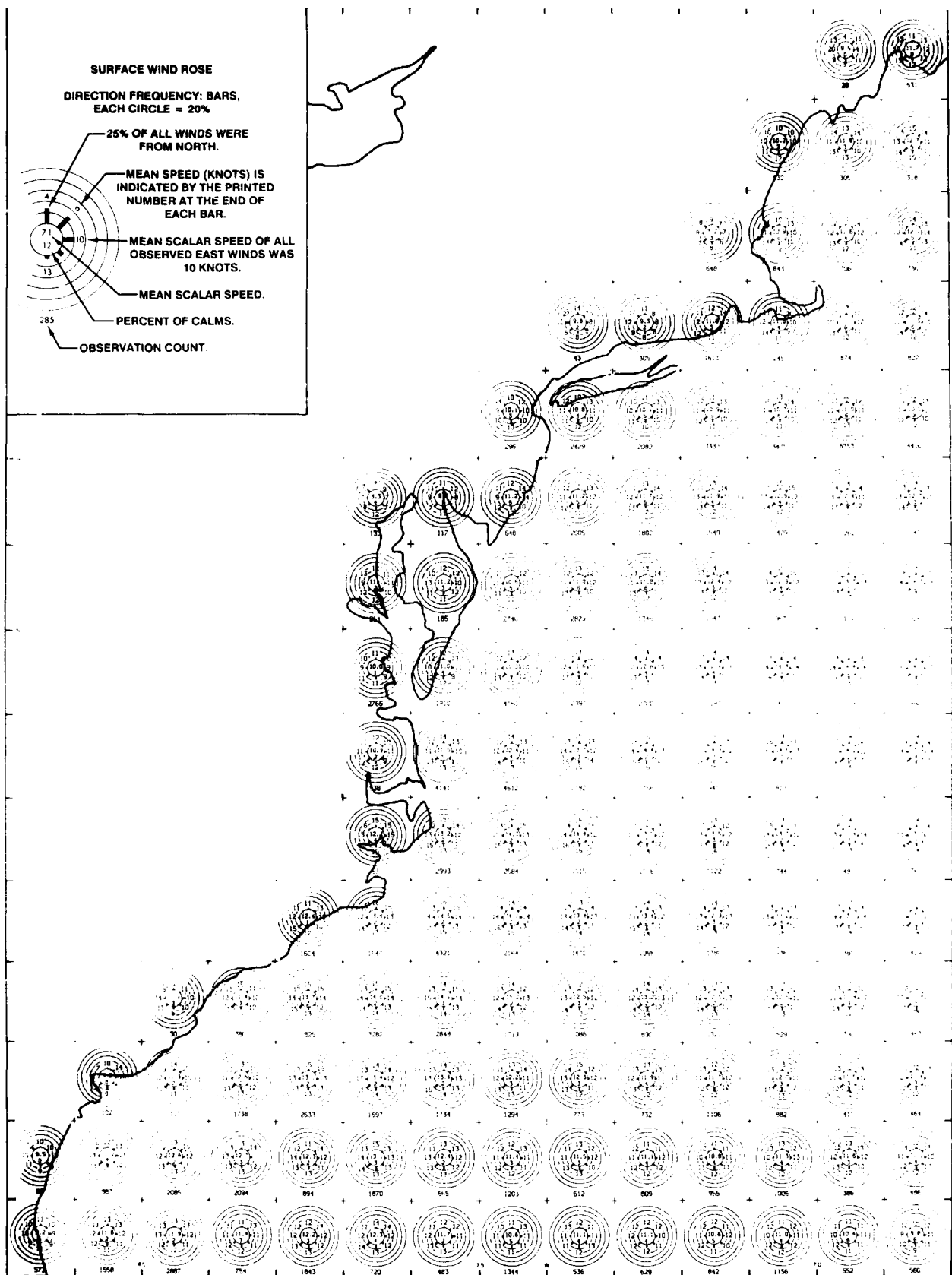
Wind Speed <11 and ≥ 34 Knots



may

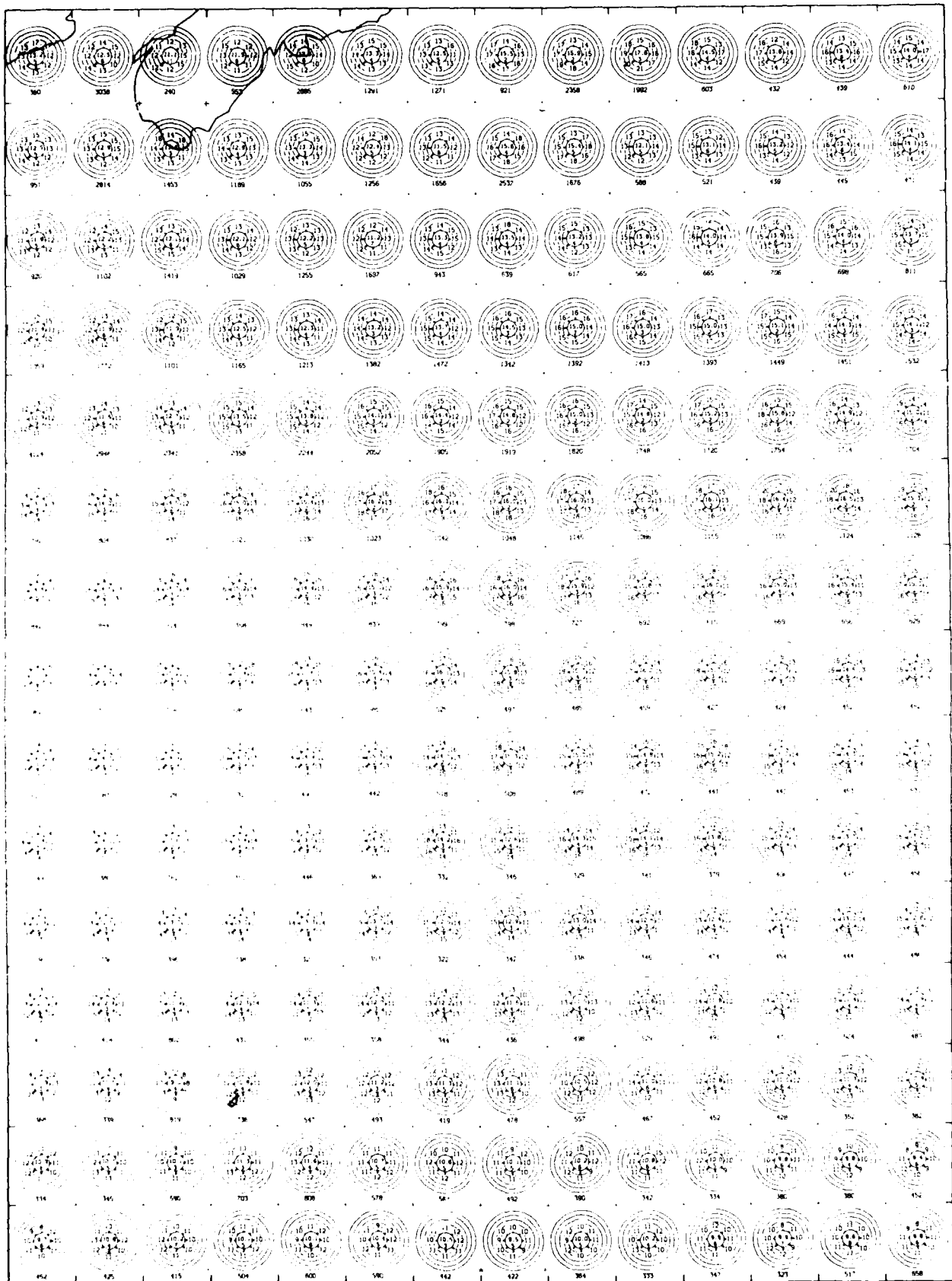
WIND SPEED 11 - 21 and 22 - 33 KNOTS





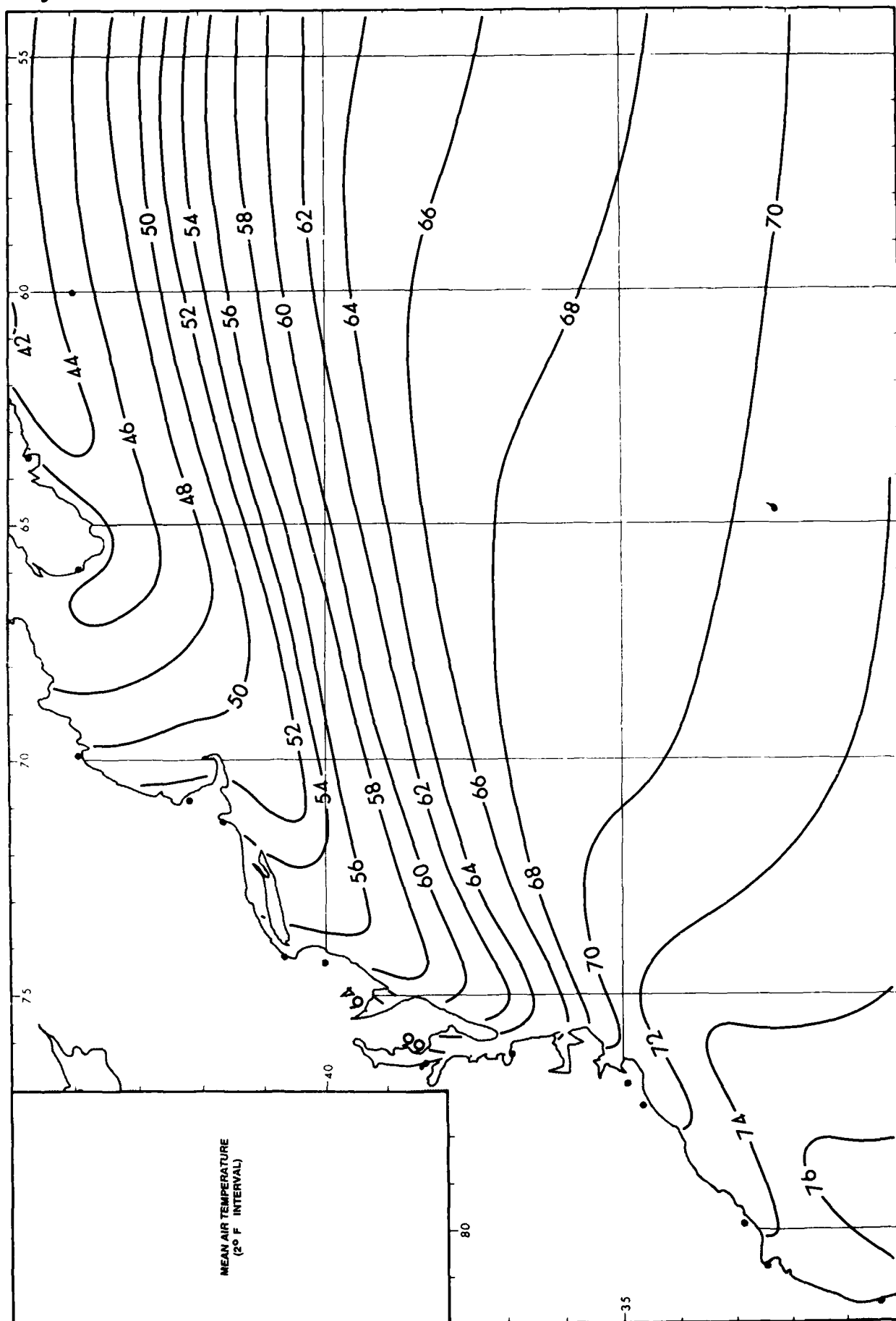
May

Surface Wind Roses



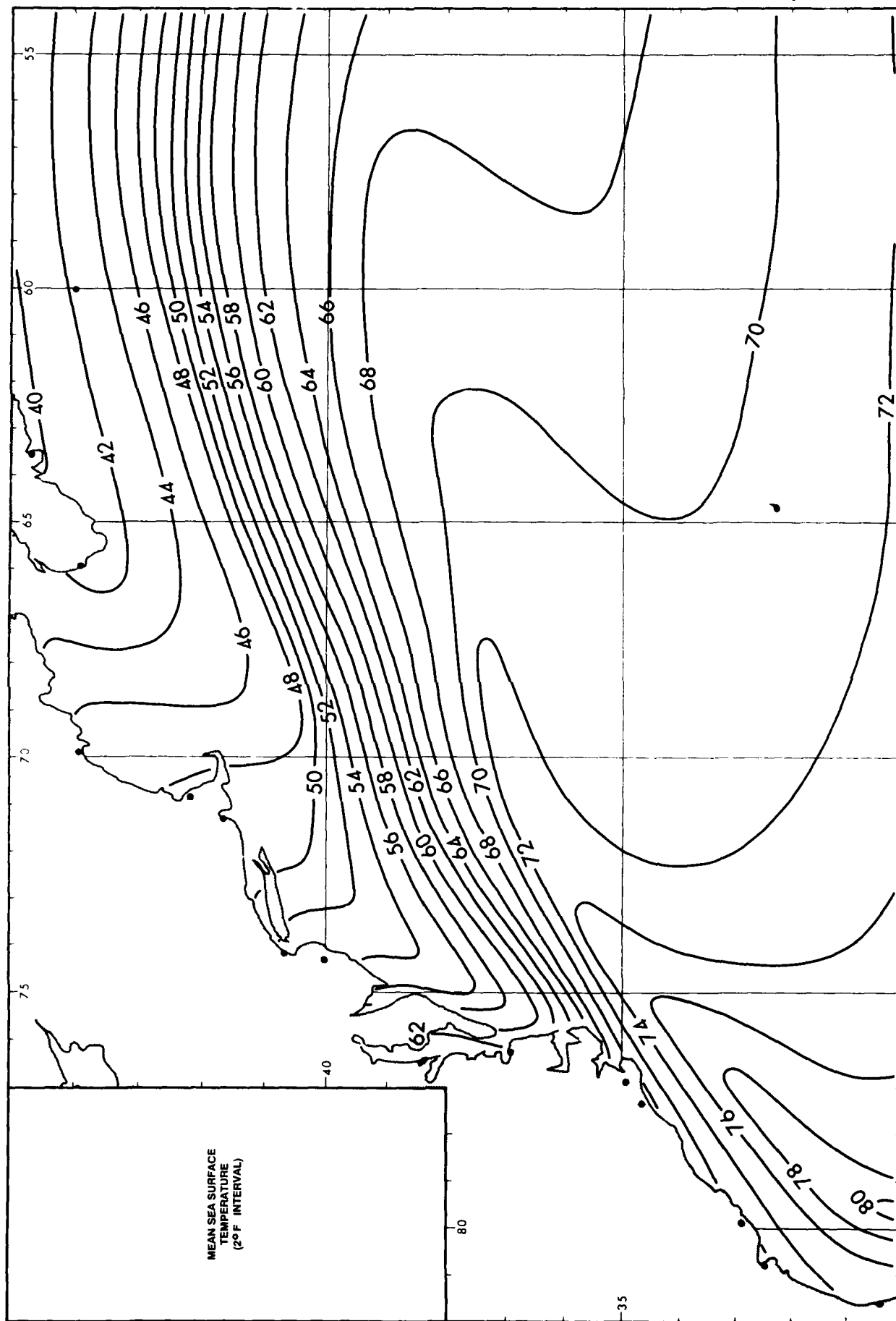
May

Mean Air Temperature



May

Mean Sea Surface Temperature



WAVE HEIGHT - FREQUENCIES

PERCENT FREQUENCY OF VARIOUS
RANGES WITHIN ONE - DEGREE
QUADRANGLES.

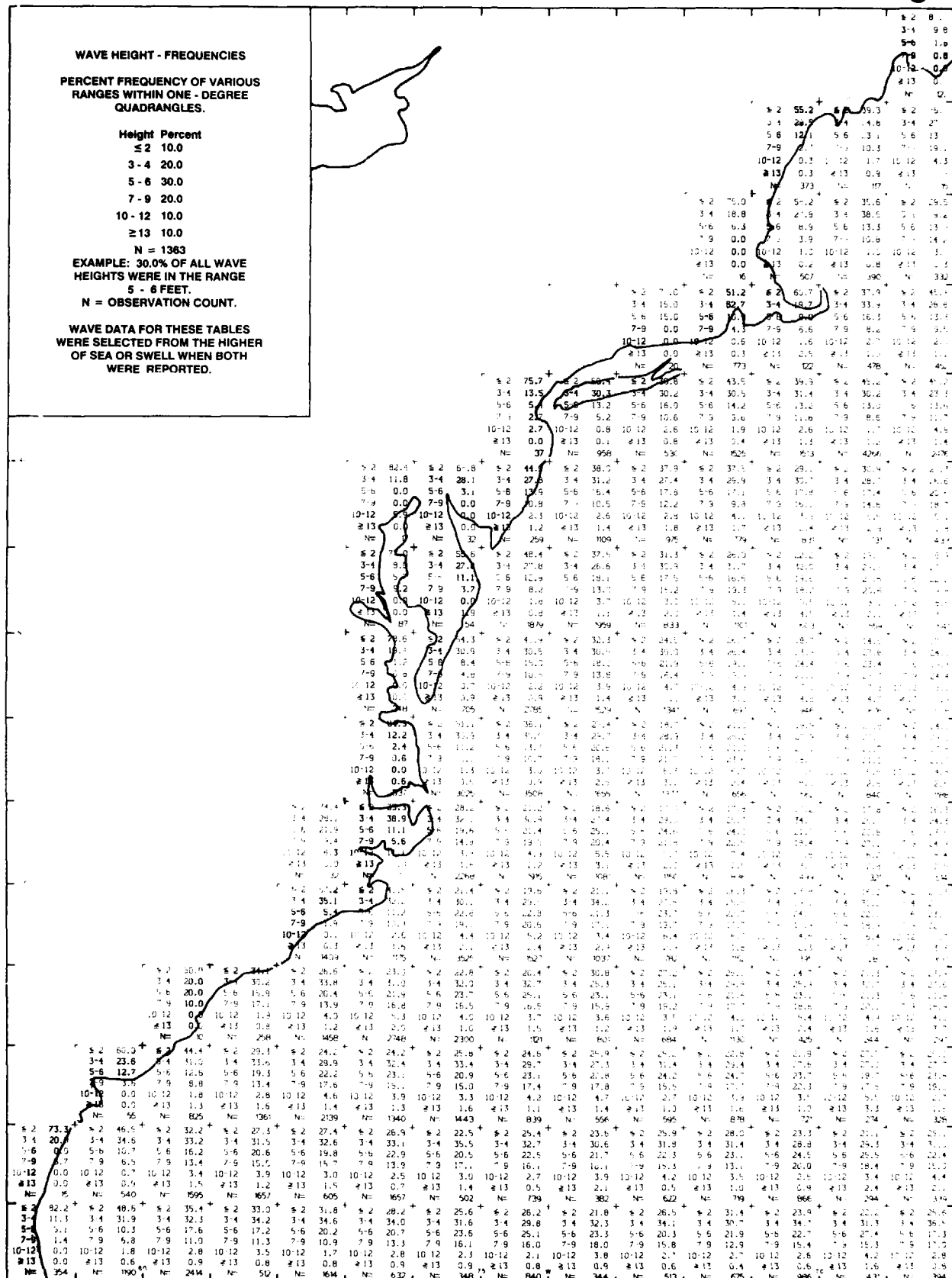
Height	Percent
≤ 2	10.0
3 - 4	20.0
5 - 6	30.0
7 - 9	20.0
10 - 12	10.0
≥ 13	10.0

N = 1363

EXAMPLE: 30.0% OF ALL WAVE
HEIGHTS WERE IN THE RANGE
5 - 6 FEET.

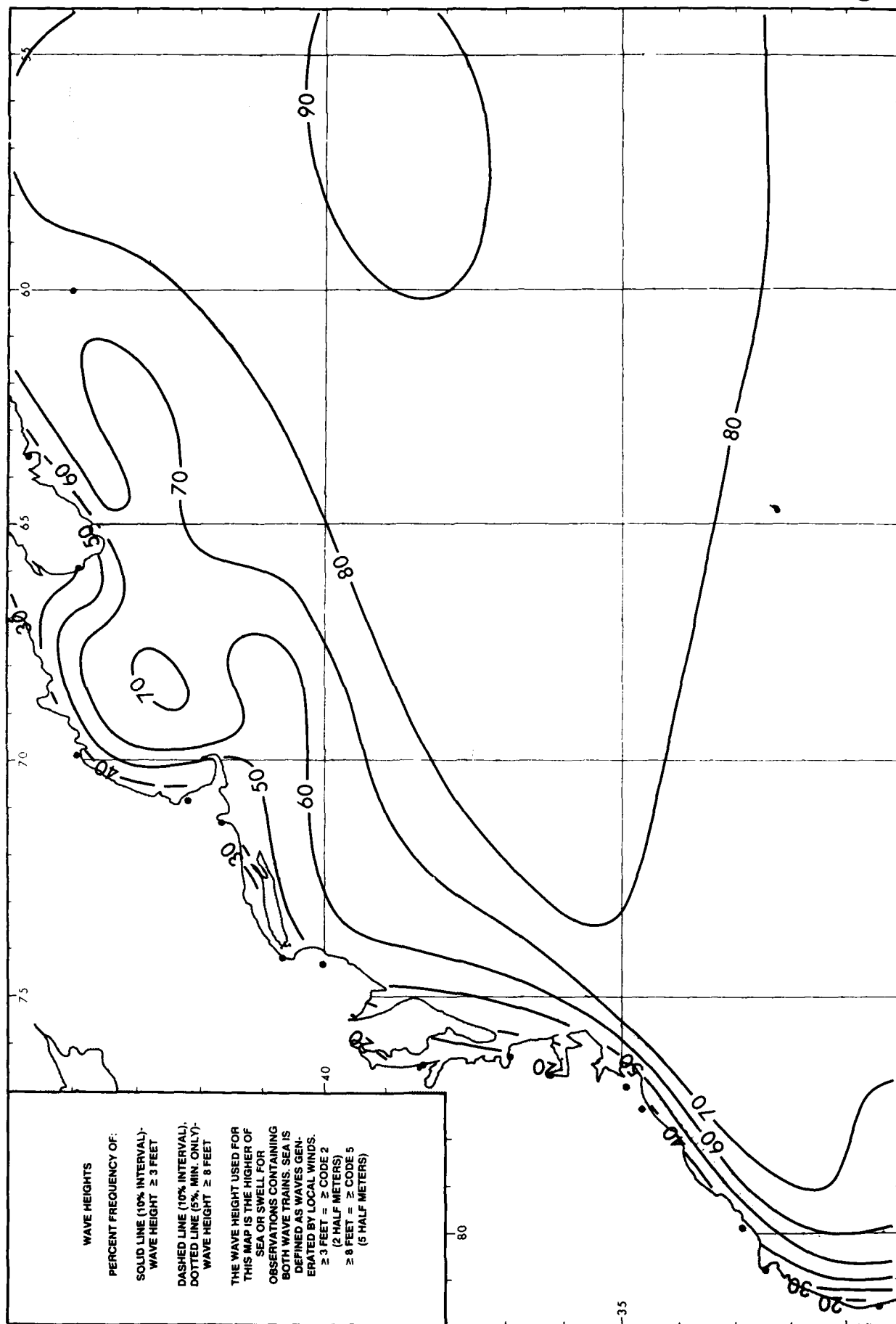
N = OBSERVATION COUNT.

WAVE DATA FOR THESE TABLES
WERE SELECTED FROM THE HIGHER
OF SEA OR SWELL WHEN BOTH
WERE REPORTED.



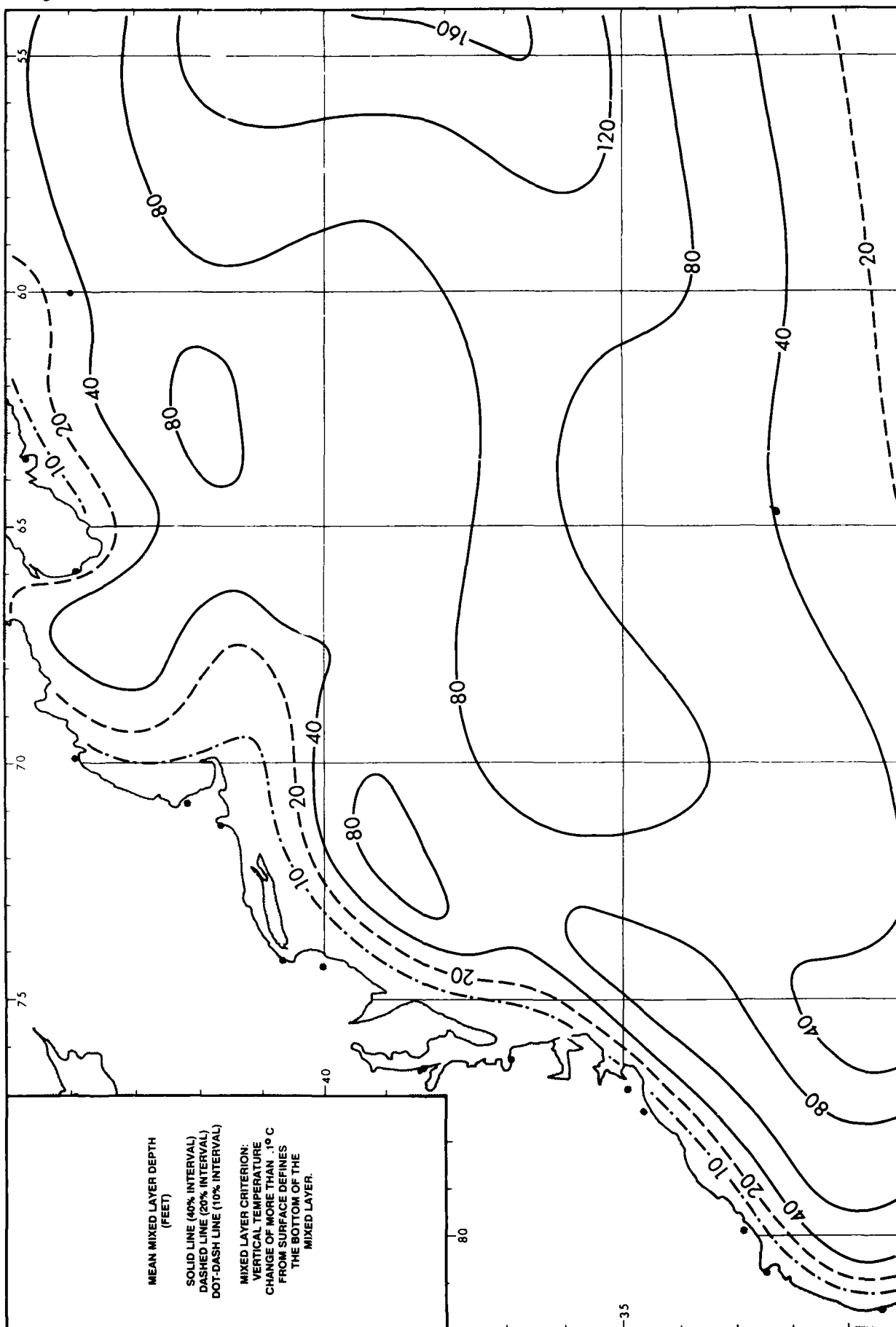
May

Wave Height



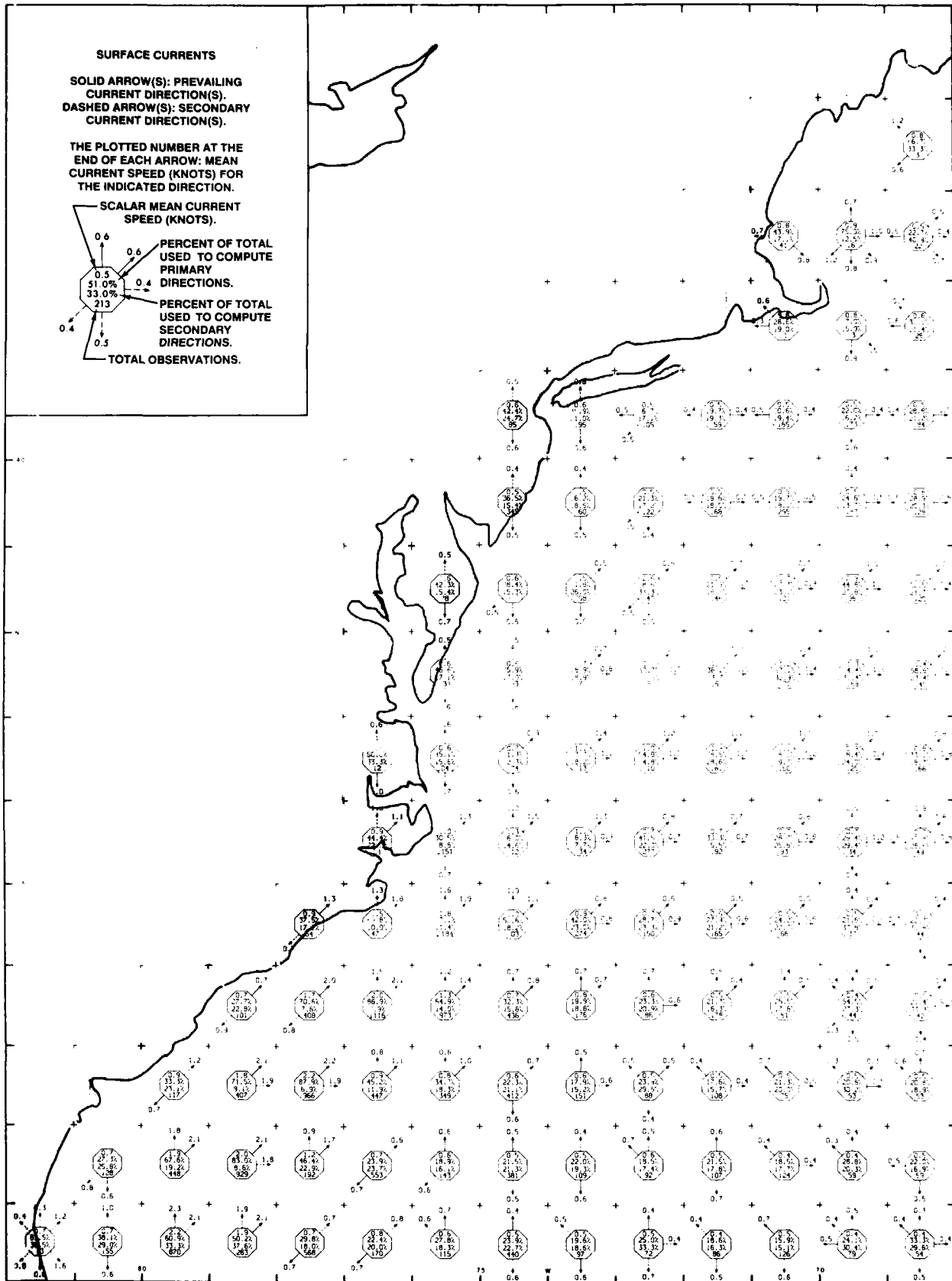
May

Mean Mixed Layer Depth



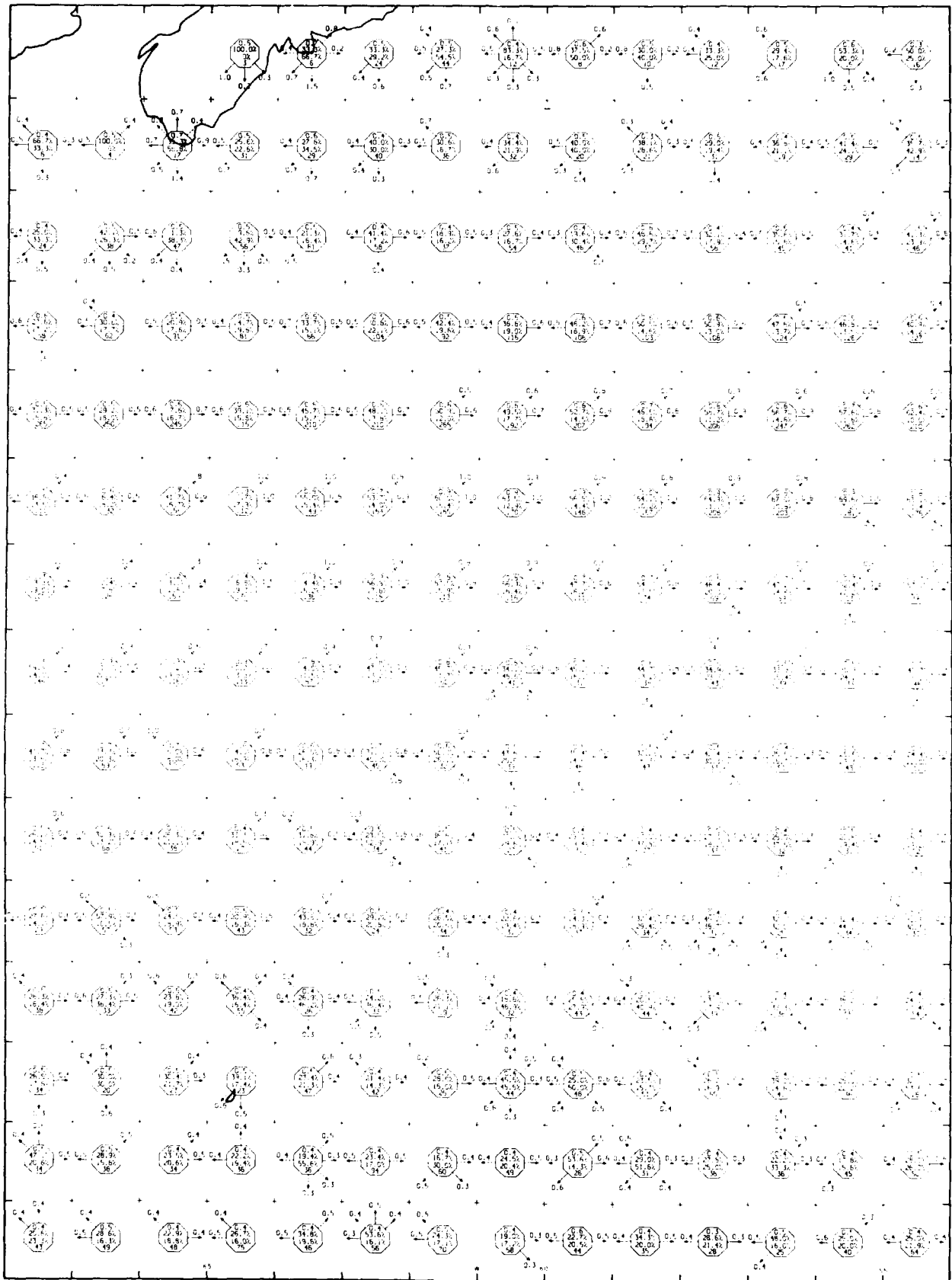
May

Surface Currents



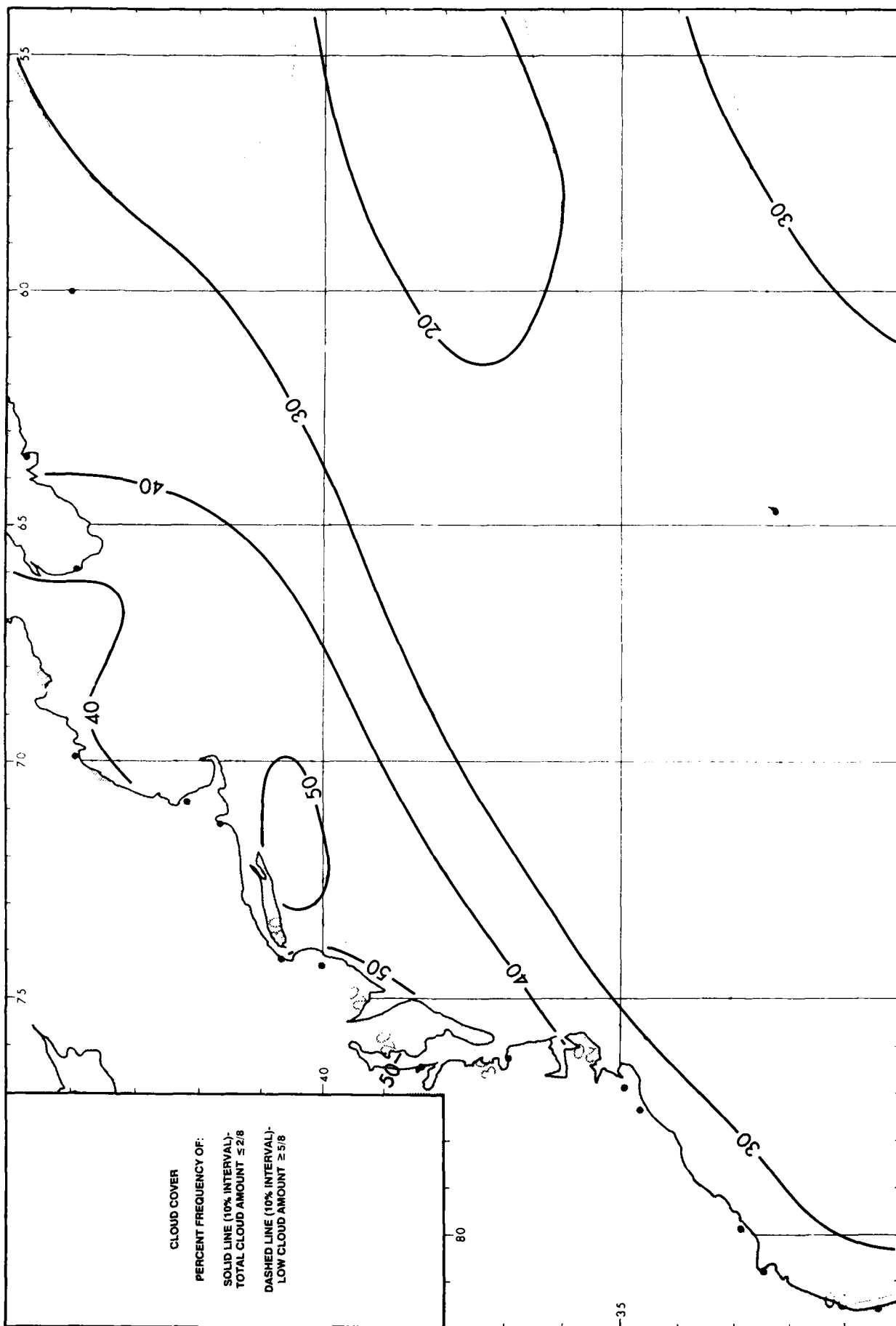
May

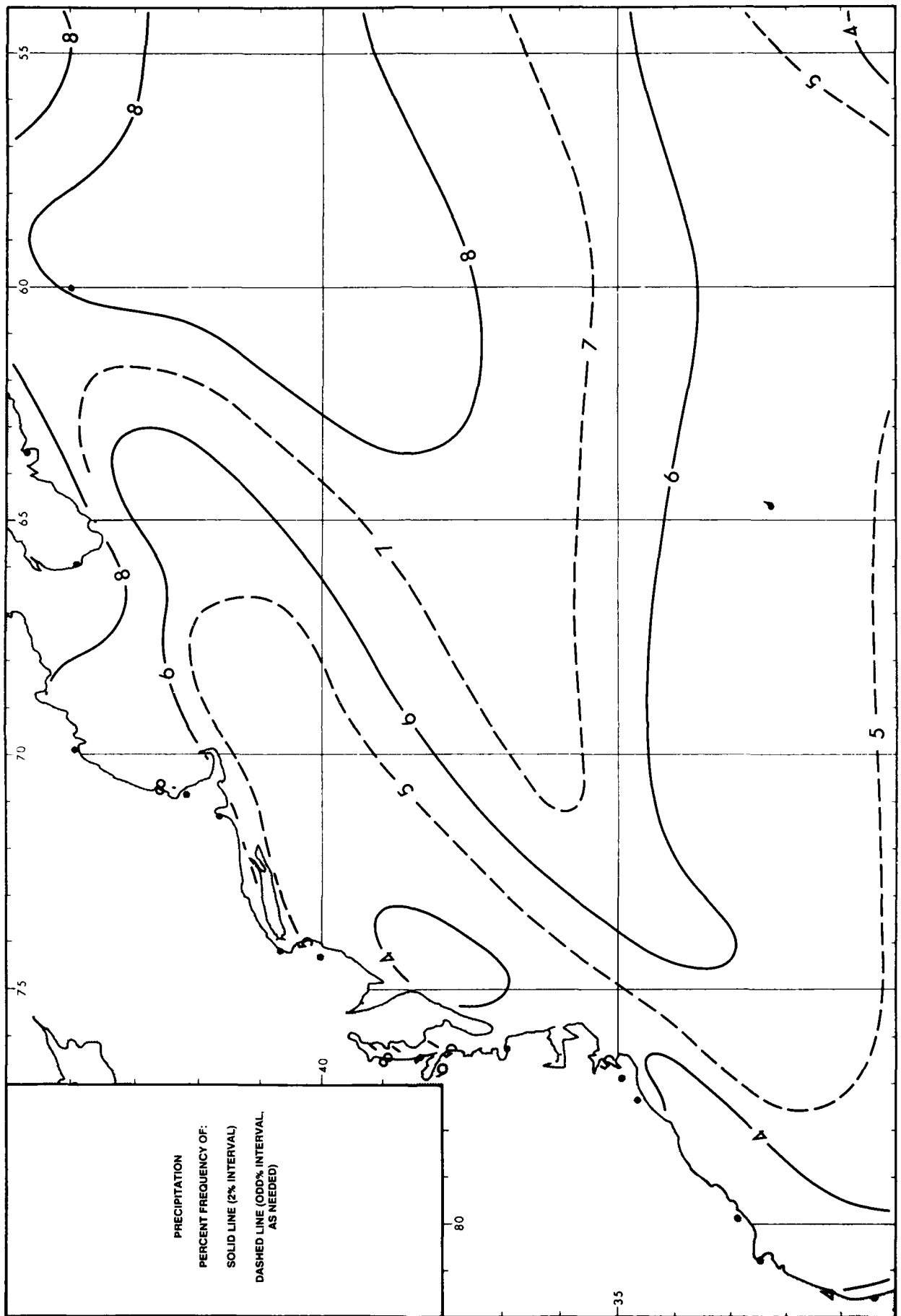
Surface Currents



June

Clouds



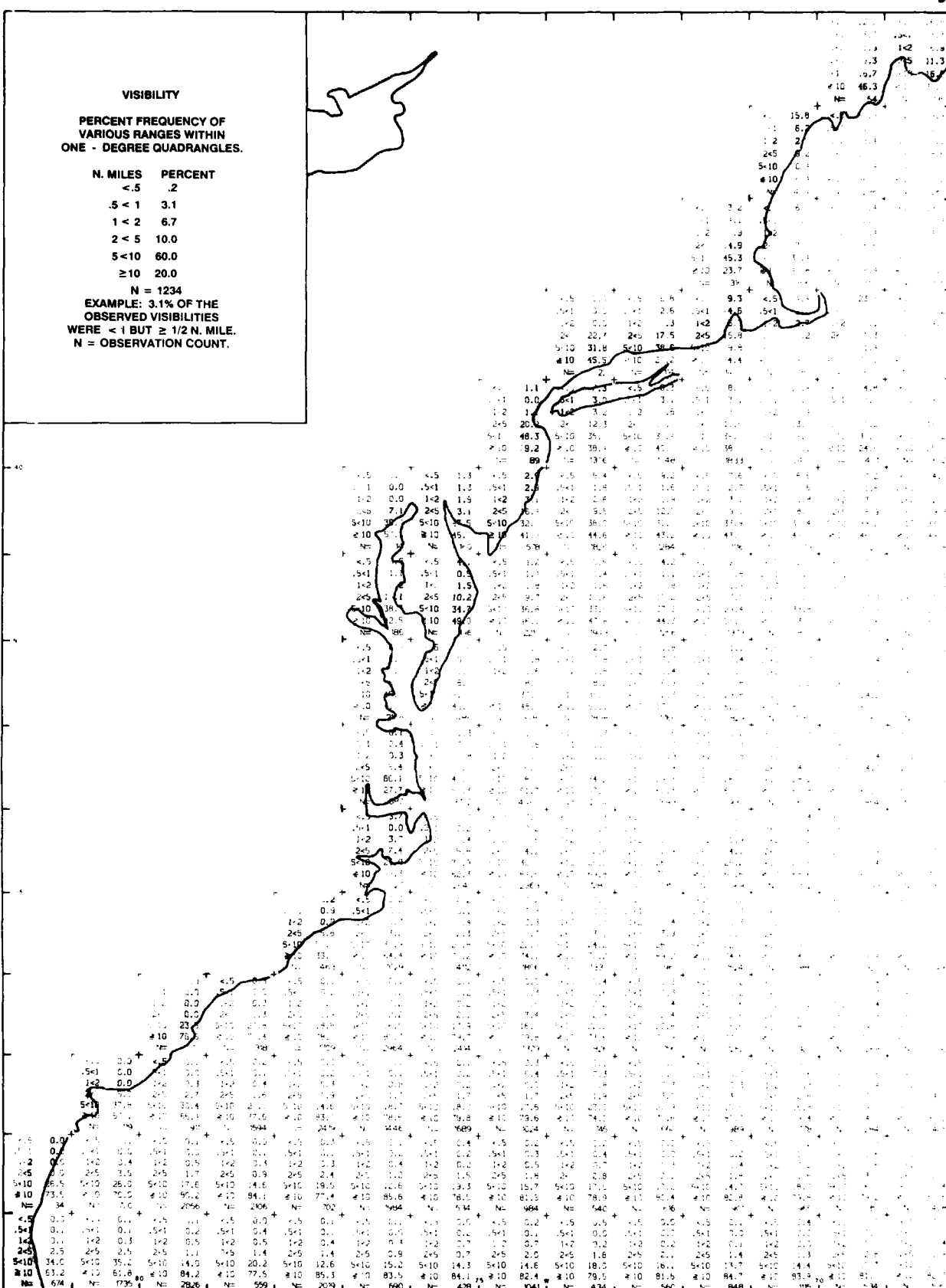


VISIBILITY
PERCENT FREQUENCY OF
VARIOUS RANGES WITHIN
ONE - DEGREE QUADRANGLES.

N. MILES	PERCENT
<.5	.2
.5 < 1	3.1
1 < 2	6.7
2 < 5	10.0
5 < 10	60.0
≥ 10	20.0

N = 1234

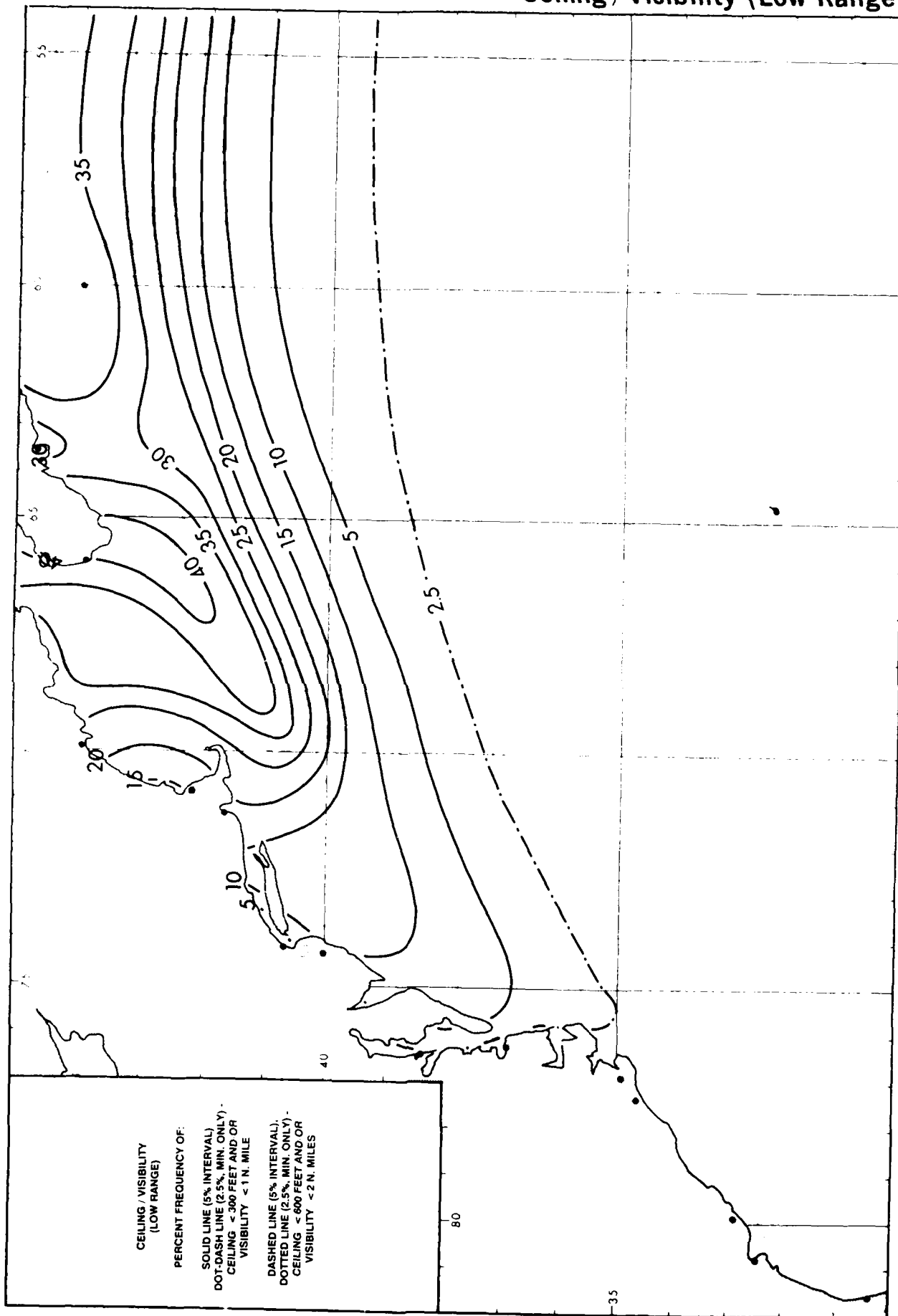
EXAMPLE: 3.1% OF THE
OBSERVED VISIBILITIES
WERE < 1 BUT ≥ 1/2 N. MILE.
N = OBSERVATION COUNT.



4.5	21.8	4.5	19.7	4.5	18.3	4.5	14.9	4.5	20.9	4.5	22.4	4.5	24.8	4.5	25.1	4.5	26.6	4.5	31.1	4.5	33.1	4.5	35.8	4.5	37.4	4.5	37.4
5-1	2.5	5-1	2.6	5-1	2.9	5-1	1.6	5-1	2.5	5-1	3.7	5-1	4.0	5-1	2.5	5-1	3.0	5-1	2.8	5-1	1.8	5-1	4.7	5-1	4.2	5-1	4.2
1-2	3.9	1-2	4.3	1-2	3.8	1-2	5.2	1-2	3.5	1-2	3.4	1-2	3.6	1-2	5.1	1-2	4.2	1-2	2.8	1-2	1.2	1-2	1.2	1-2	1.2	1-2	1.2
2-5	8.4	2-5	8.8	2-5	10.1	2-5	8.5	2-5	8.1	2-5	9.1	2-5	8.4	2-5	8.0	2-5	8.4	2-5	8.3	2-5	8.3	2-5	8.1	2-5	8.4	2-5	8.9
5-10	16.8	5-10	19.8	5-10	28.4	5-10	22.2	5-10	21.6	5-10	23.4	5-10	21.6	5-10	21.1	5-10	21.1	5-10	21.1	5-10	17.2	5-10	16.4	5-10	23.5	5-10	19.7
10	46.6	10	44.8	10	38.5	10	45.8	10	43.5	10	38.9	10	37.5	10	40.3	10	34.2	10	41.2	10	33.0	10	34.0	10	34.5	10	37.2
N	760	N	722	N	708	N	496	N	2589	N	756	N	760	N	106	N	2538	N	754	N	788	N	360	N	360	N	40
4.5	23.4	4.5	21.7	4.5	25.6	4.5	22.9	4.5	23.2	4.5	21.7	4.5	25.7	4.5	25.1	4.5	26.6	4.5	31.5	4.5	29.3	4.5	26.1	4.5	26.6	4.5	26.6
5-1	2.8	5-1	2.6	5-1	2.8	5-1	2.8	5-1	3.5	5-1	3.9	5-1	4.5	5-1	4.8	5-1	3.2	5-1	3.9	5-1	3.7	5-1	3.6	5-1	3.7	5-1	3.8
1-2	6.2	1-2	4.5	1-2	4.9	1-2	4.2	1-2	3.6	1-2	2.7	1-2	5.1	1-2	3.8	1-2	4.0	1-2	3.7	1-2	2.4	1-2	1.9	1-2	1.9	1-2	4.1
2-5	9.8	2-5	7.7	2-5	9.8	2-5	9.0	2-5	9.2	2-5	9.2	2-5	7.3	2-5	7.3	2-5	8.2	2-5	9.7	2-5	8.8	2-5	8.7	2-5	8.9	2-5	9.3
5-10	21.3	5-10	20.1	5-10	24.2	5-10	22.4	5-10	25.3	5-10	26.1	5-10	20.9	5-10	25.0	5-10	19.4	5-10	21.2	5-10	21.0	5-10	20.8	5-10	25.7	5-10	22.1
10	36.5	10	46.4	10	32.6	10	38.9	10	35.3	10	36.5	10	36.7	10	37.2	10	33.1	10	31.1	10	37.5	10	37.8	10	37.8	10	40
N	760	N	744	N	709	N	709	N	899	N	899	N	739	N	749	N	704	N	74	N	74	N	362	N	39	N	340
4.5	22.7	4.5	20.7	4.5	28.4	4.5	18.7	4.5	21.4	4.5	20.5	4.5	19.7	4.5	19.1	4.5	14.1	4.5	17.0	4.5	13.4	4.5	14.7	4.5	14.7	4.5	14.7
5-1	2.9	5-1	2.9	5-1	3.7	5-1	4.1	5-1	2.9	5-1	4.3	5-1	4.5	5-1	3.2	5-1	3.2	5-1	3.0	5-1	2.9	5-1	3.1	5-1	3.1	5-1	3.4
1-2	3.2	1-2	3.5	1-2	3.8	1-2	2.7	1-2	2.8	1-2	3.8	1-2	2.8	1-2	3.2	1-2	2.7	1-2	1.9	1-2	1.9	1-2	1.9	1-2	1.9	1-2	4.1
2-5	9.7	2-5	9.8	2-5	10.5	2-5	7.7	2-5	7.1	2-5	8.8	2-5	7.2	2-5	7.9	2-5	7.2	2-5	9.1	2-5	7.8	2-5	10.5	2-5	7.4	2-5	7.1
5-10	26.8	5-10	22.5	5-10	20.9	5-10	21.8	5-10	19.3	5-10	25.6	5-10	25.6	5-10	25.0	5-10	19.6	5-10	21.7	5-10	21.6	5-10	24.1	5-10	21.7	5-10	24.7
10	37.4	10	47.7	10	34.3	10	38.8	10	41.3	10	43.4	10	39.2	10	42.8	10	37.4	10	40.2	10	40.4	10	40.2	10	40.3	10	46.1
N	760	N	722	N	709	N	809	N	760	N	760	N	760	N	760	N	760	N	470	N	46	N	362	N	39	N	340
4.5	30.2	4.5	26.6	4.5	19.3	4.5	16.2	4.5	11.7	4.5	11.5	4.5	5.4	4.5	7.6	4.5	2.1	4.5	3.7	4.5	3.1	4.5	4.8	4.5	11.5	4.5	3.4
5-1	3.1	5-1	3.4	5-1	4.4	5-1	4.2	5-1	2.5	5-1	2.5	5-1	2.7	5-1	2.3	5-1	1.7	5-1	1.1	5-1	1.7	5-1	2.1	5-1	2.1	5-1	2.4
1-2	3.3	1-2	3.7	1-2	3.7	1-2	4.2	1-2	2.7	1-2	2.6	1-2	1.8	1-2	1.3	1-2	1.1	1-2	1.9	1-2	0.6	1-2	1.1	1-2	1.1	1-2	1.1
2-5	15.2	2-5	10.8	2-5	10.5	2-5	16.8	2-5	8.9	2-5	7.5	2-5	8.4	2-5	8.7	2-5	6.4	2-5	8.8	2-5	7.1	2-5	10.5	2-5	8.7	2-5	10.1
5-10	42.7	5-10	21.6	5-10	24.5	5-10	24.3	5-10	30.6	5-10	25.1	5-10	42.2	5-10	26.3	5-10	35.8	5-10	25.8	5-10	25.5	5-10	29.1	5-10	29.7	5-10	29.0
10	26.3	10	25.1	10	14.7	10	43.1	10	49.8	10	43.5	10	29.1	10	28.3	10	28.0	10	42.7	10	42.0	10	46.1	10	45.5	10	29.0
N	760	N	744	N	709	N	789	N	899	N	760	N	760	N	760	N	760	N	760	N	760	N	760	N	760	N	760
4.5	11.1	4.5	11.7	4.5	6.8	4.5	2.7	4.5	7.4	4.5	2.5	4.5	1.9	4.5	1.8	4.5	1.7	4.5	0.9	4.5	0.8	4.5	0.8	4.5	0.8	4.5	0.8
5-1	1.1	5-1	1.3	5-1	2.3	5-1	1.1	5-1	1.8	5-1	1.2	5-1	1.4	5-1	1.1	5-1	1.1	5-1	0.4	5-1	0.6	5-1	0.7	5-1	0.7	5-1	0.8
1-2	1.7	1-2	2.6	1-2	1.6	1-2	1.6	1-2	1.6	1-2	1.2	1-2	1.7	1-2	1.9	1-2	1.4	1-2	1.1	1-2	0.6	1-2	0.6	1-2	0.6	1-2	0.6
2-5	1.6	2-5	1.7	2-5	1.4	2-5	1.5	2-5	1.7	2-5	1.5	2-5	1.5	2-5	1.5	2-5	1.4	2-5	1.4	2-5	1.4	1.4	1.4	1.4	1.4	1.4	1.4
5-10	1.2	5-10	1.8	5-10	1.1	5-10	1.8	5-10	1.1	5-10	1.1	5-10	1.1	5-10	1.1	5-10	1.1	5-10	1.1	5-10	1.1	1.1	1.1	1.1	1.1	1.1	1.1
10	1.1	10	1.1	10	1.1	10	1.1	10	1.1	10	1.1	10	1.1	10	1.1	10	1.1	10	1.1	10	1.1	1.1	1.1	1.1	1.1	1.1	1.1
N	760	N	744	N	709	N	760	N	760	N	760	N	760	N	760	N	760	N	760	N	760	N	760	N	760	N	760
4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4
5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4
1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4
2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4
5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4
10	1.4	10	1.4	10	1.4	10	1.4	10	1.4	10	1.4	10	1.4	10	1.4	10	1.4	10	1.4	10	1.4	10	1.4	10	1.4	10	1.4
N	760	N	744	N	709	N	760	N	760	N	760	N	760	N	760	N	760	N	760	N	760	N	760	N	760	N	760
4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4
5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4
1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4
2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4
5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4
10	1.4	10	1.4	10	1.4	10	1.4	10	1.4	10	1.4	10	1.4	10	1.4	10	1.4	10	1.4	10	1.4	10	1.4	10	1.4	10	1.4
N	760	N	744	N	709	N	760	N	760	N	760	N	760	N	760	N	760	N	760	N	760	N	760	N	760	N	760
4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4	4.5	1.4
5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4	5-1	1.4
1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4	1-2	1.4
2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4	2-5	1.4
5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4	5-10	1.4
10	1.4	10	1.4	10	1.4	10	1.4																				

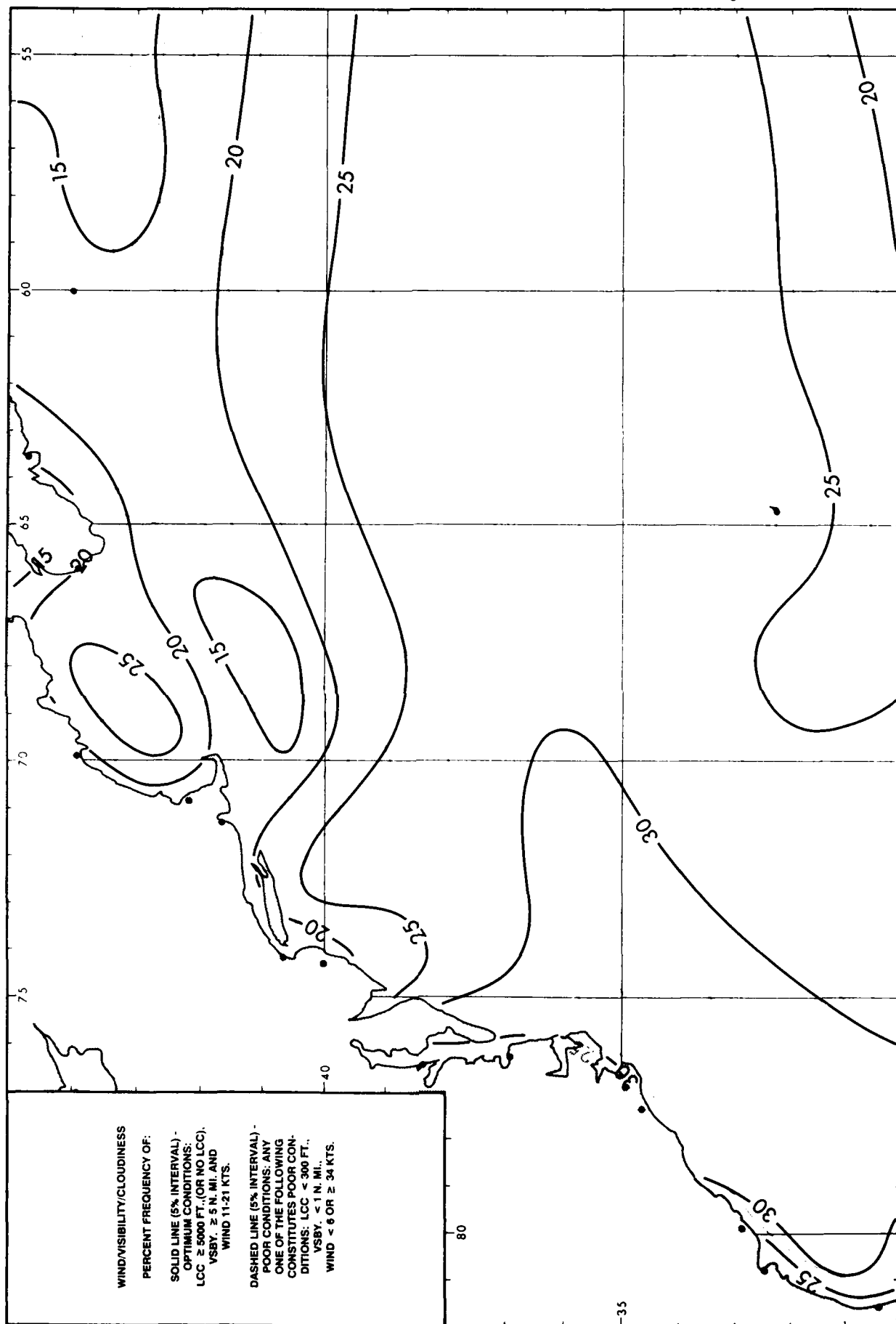
June

Ceiling / Visibility (Low Range)



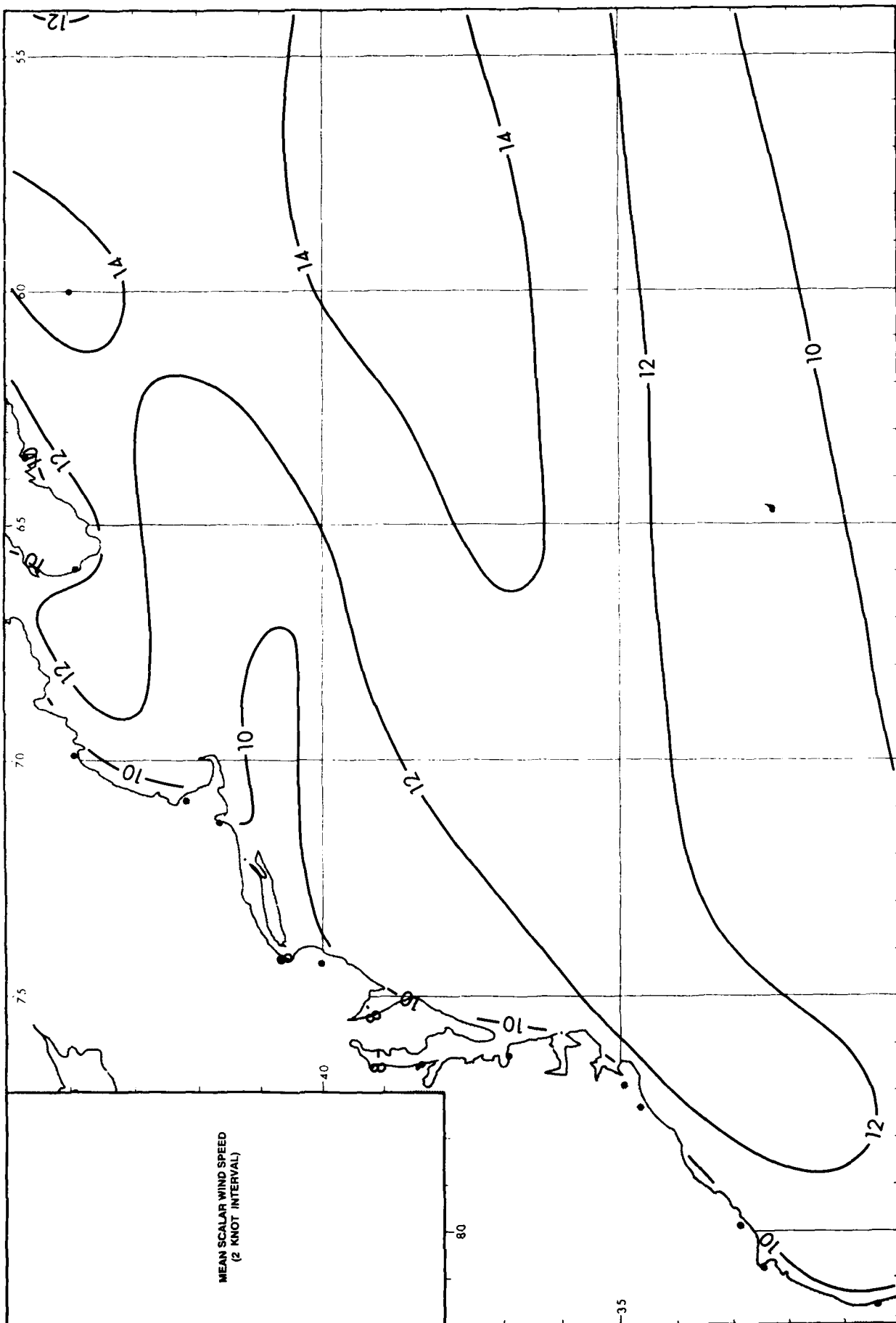
June

Wind / Visibility / Cloudiness



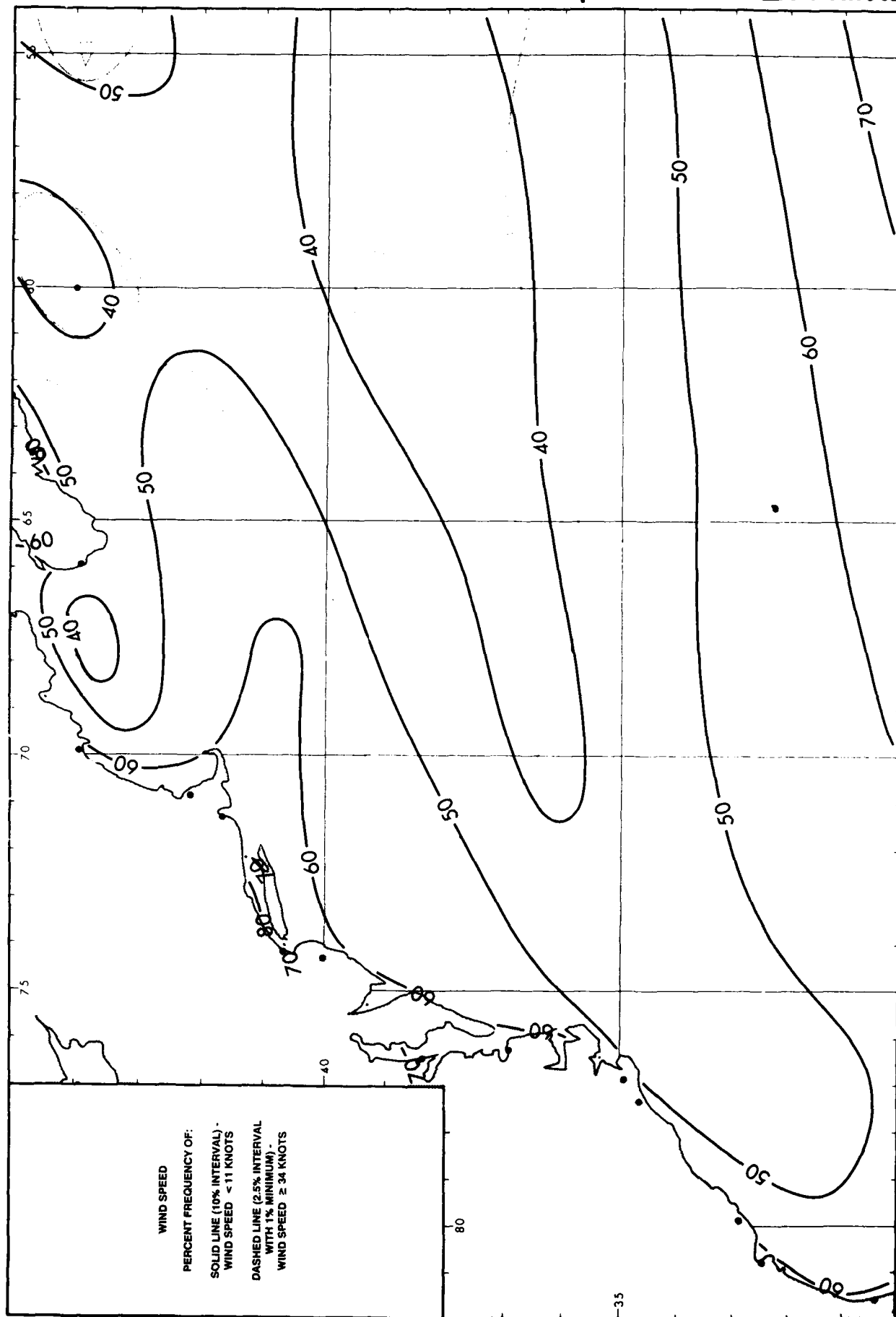
June

Mean Scalar Wind Speed



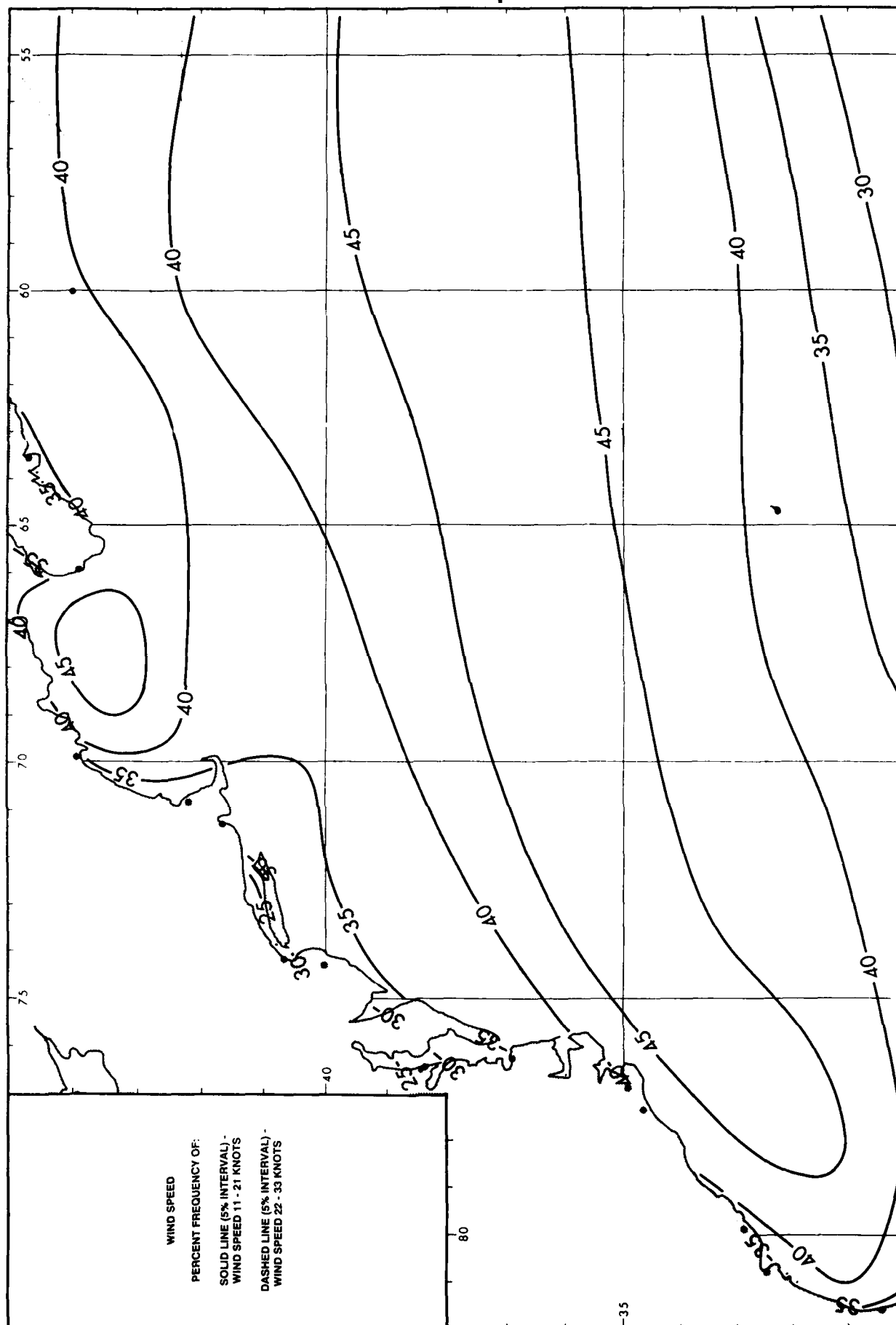
June

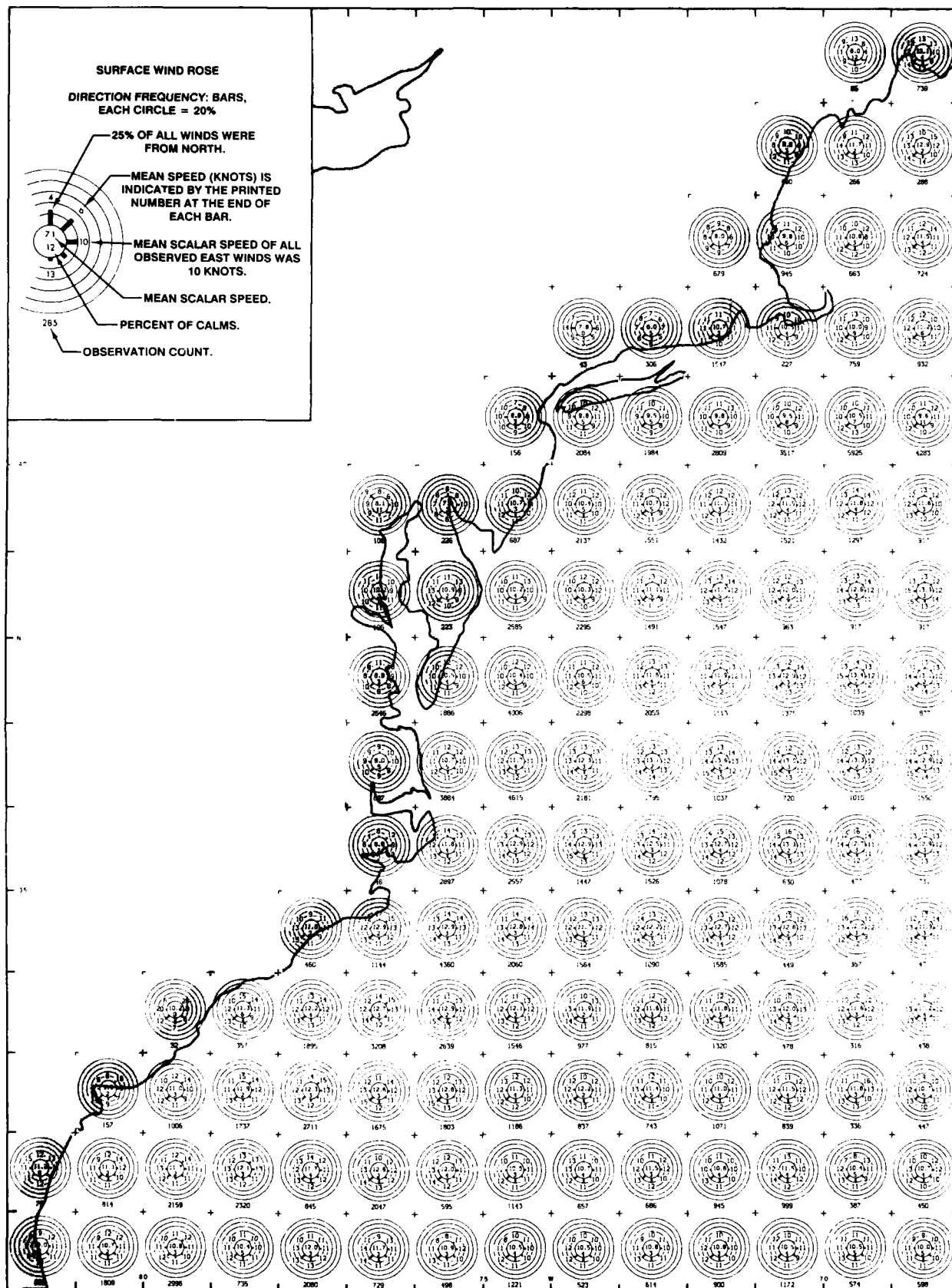
Wind Speed <11 and ≥ 34 Knots

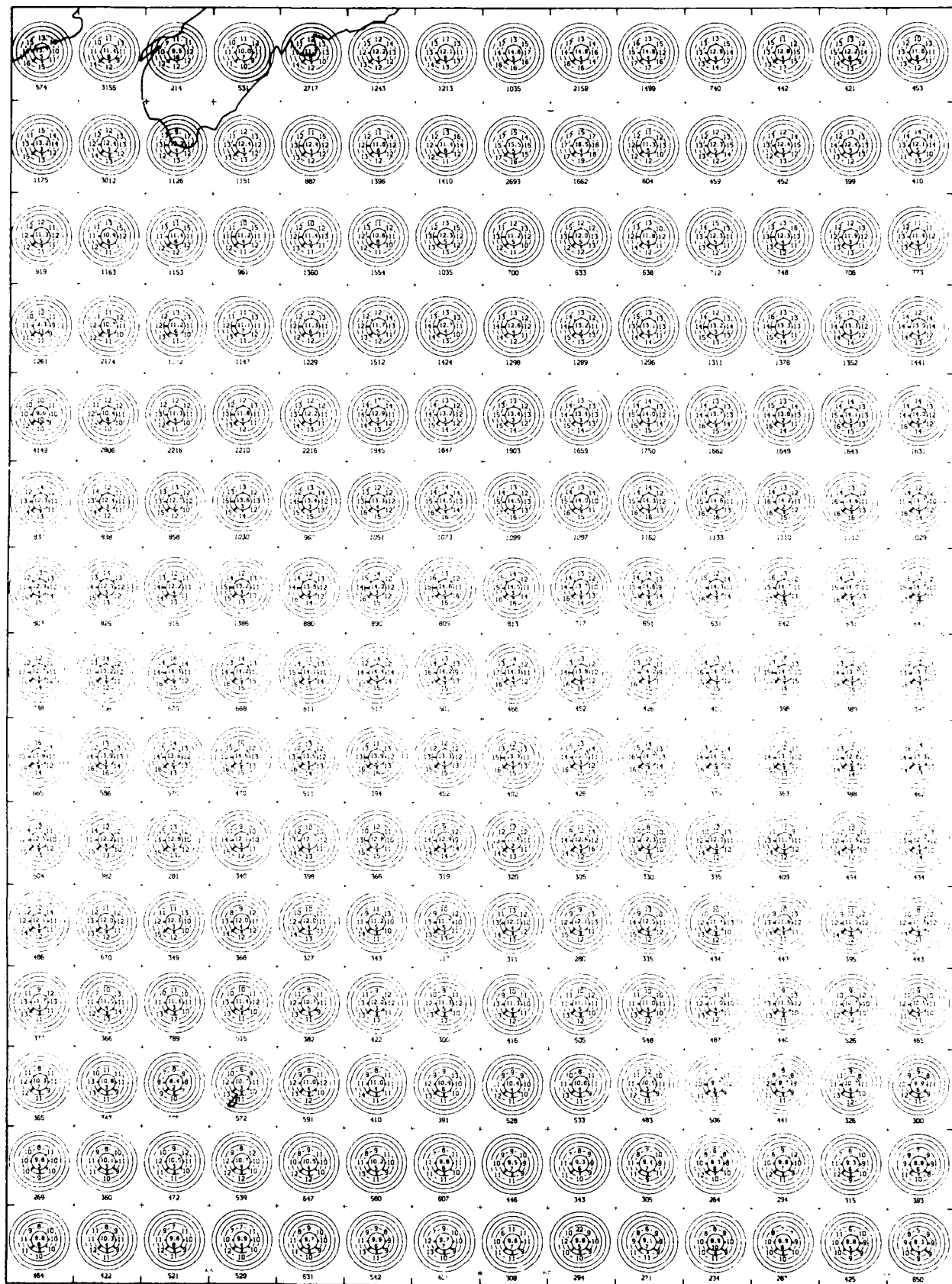


June

Wind Speed 11 - 21 and 22 - 33 Knots

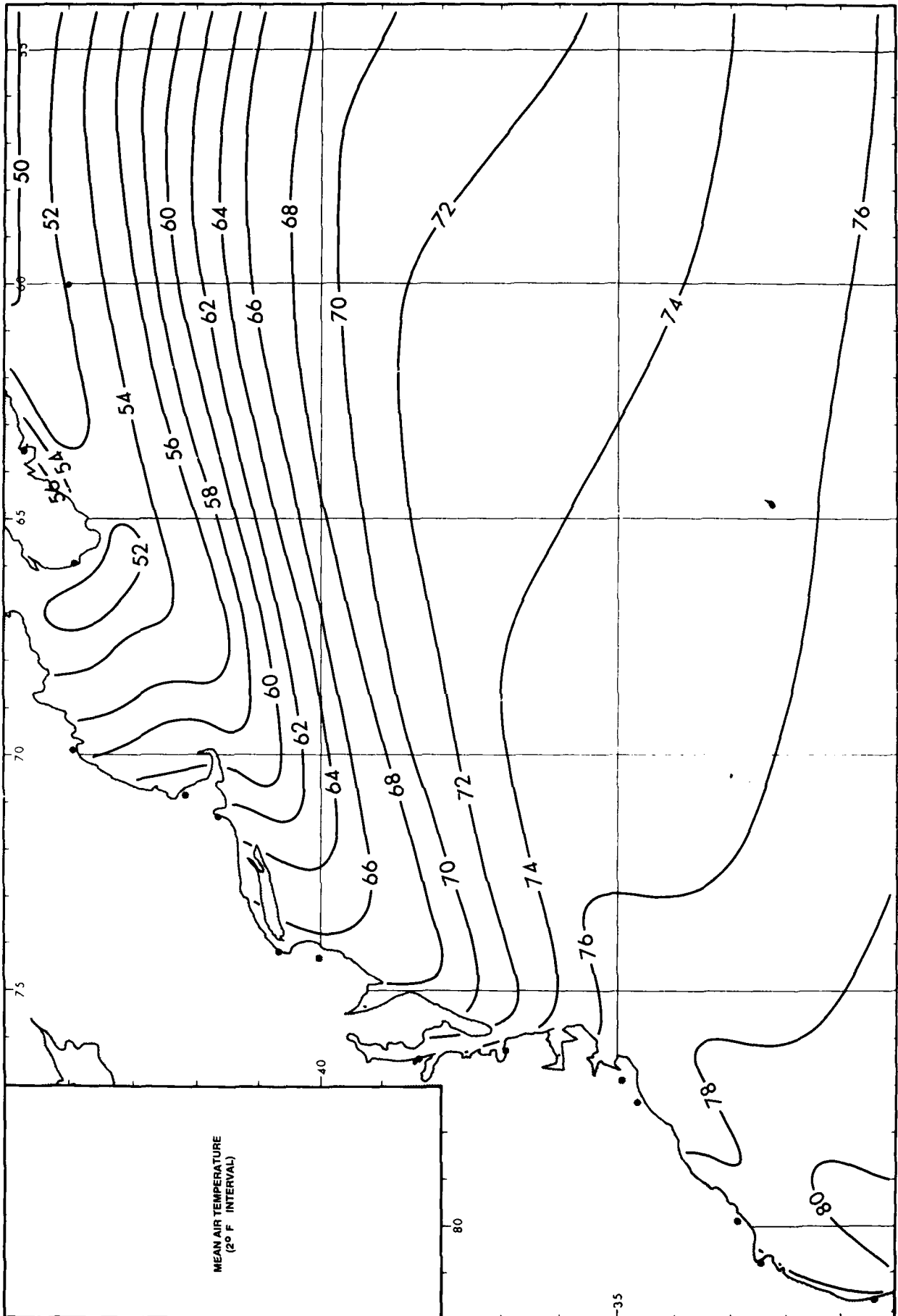






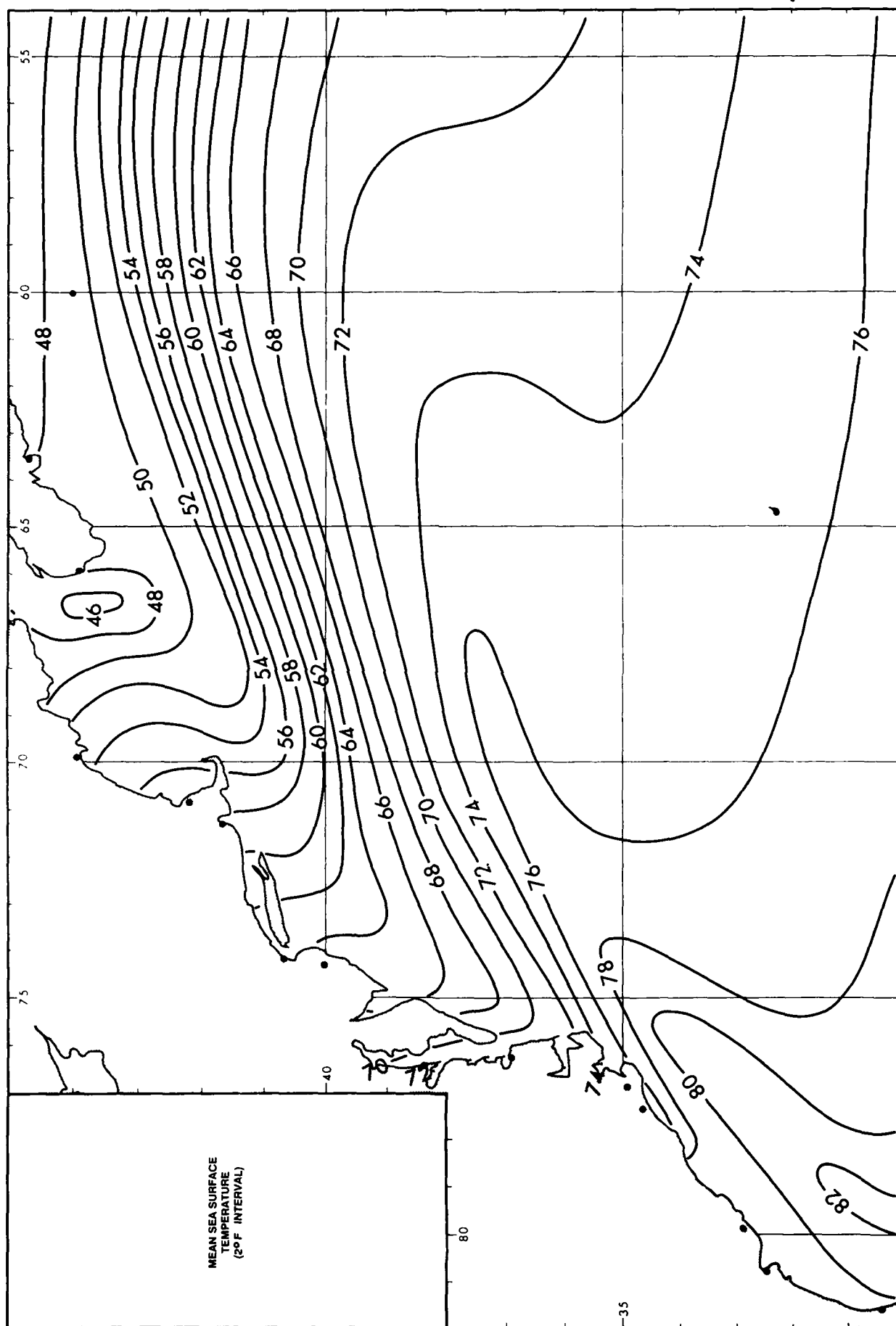
June

Mean Air Temperature



June

Mean Sea Surface Temperature



WAVE HEIGHT - FREQUENCIES

PERCENT FREQUENCY OF VARIOUS
RANGES WITHIN ONE - DEGREE
QUADRANGLES.

Height Percent

2 10.0

3-4 20.0

5-6 30.0

7-9 20.0

10-12 10.0

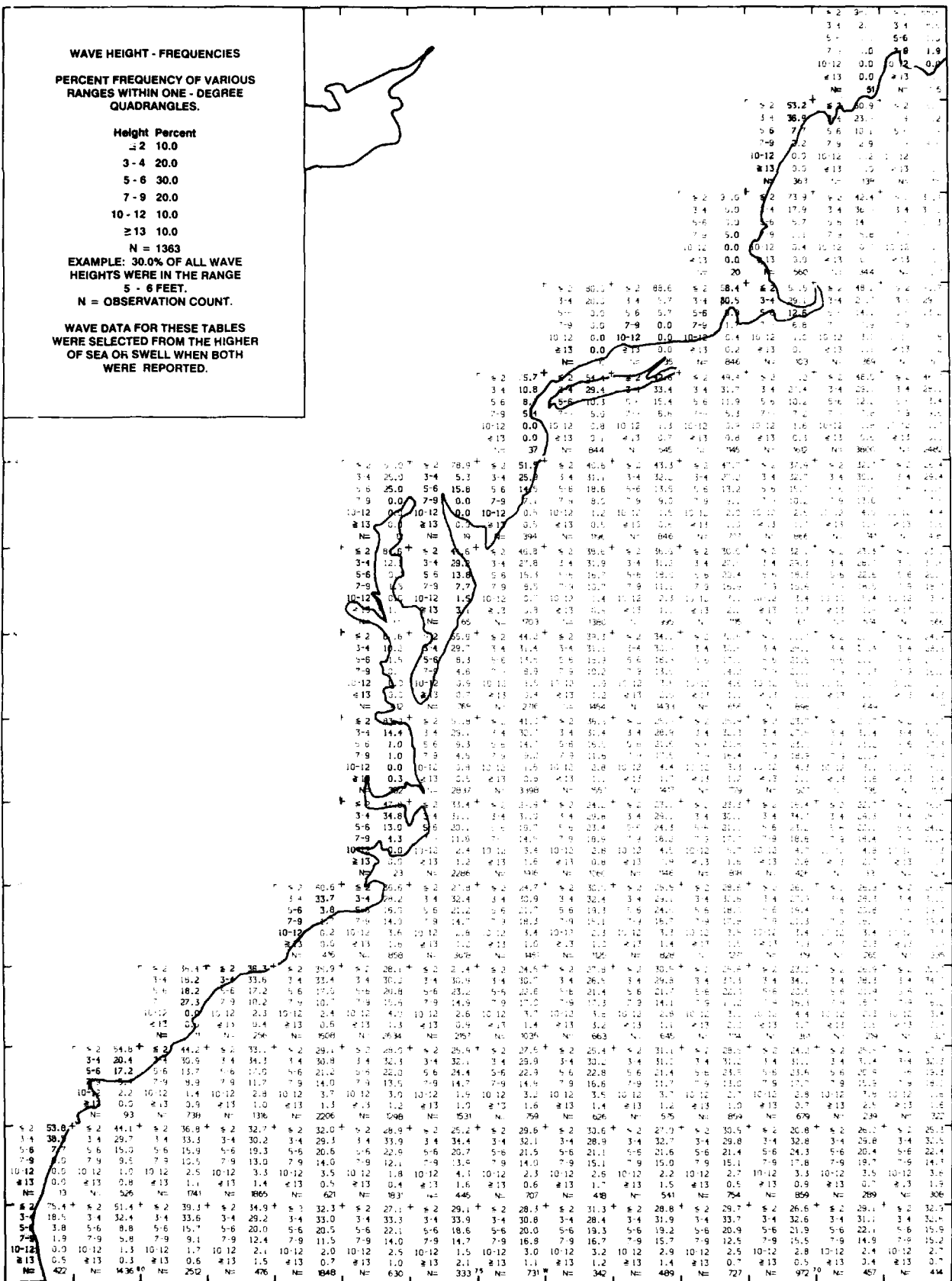
≥ 13 10.0

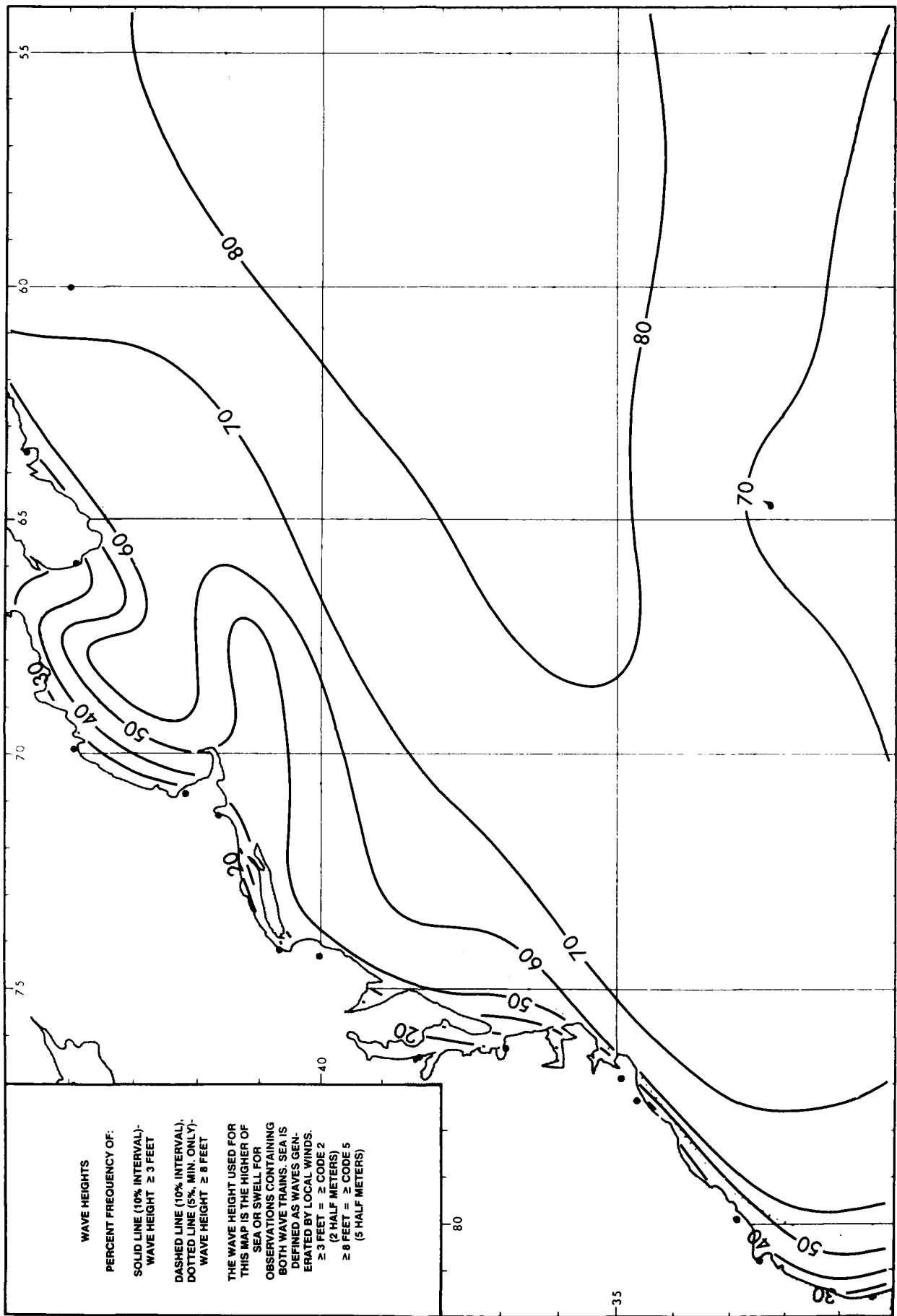
N = 1363

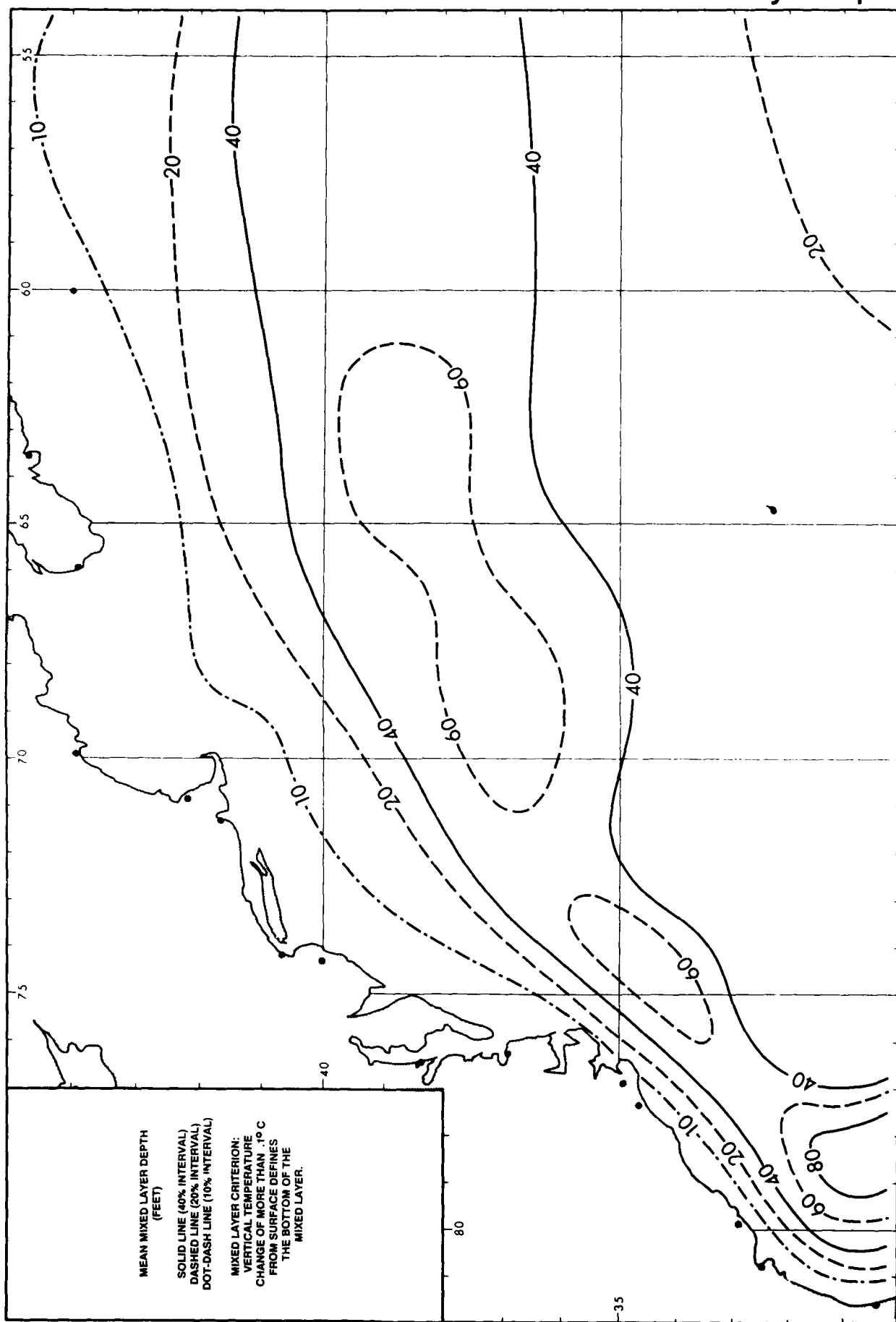
EXAMPLE: 30.0% OF ALL WAVE
HEIGHTS WERE IN THE RANGE
5 - 6 FEET.

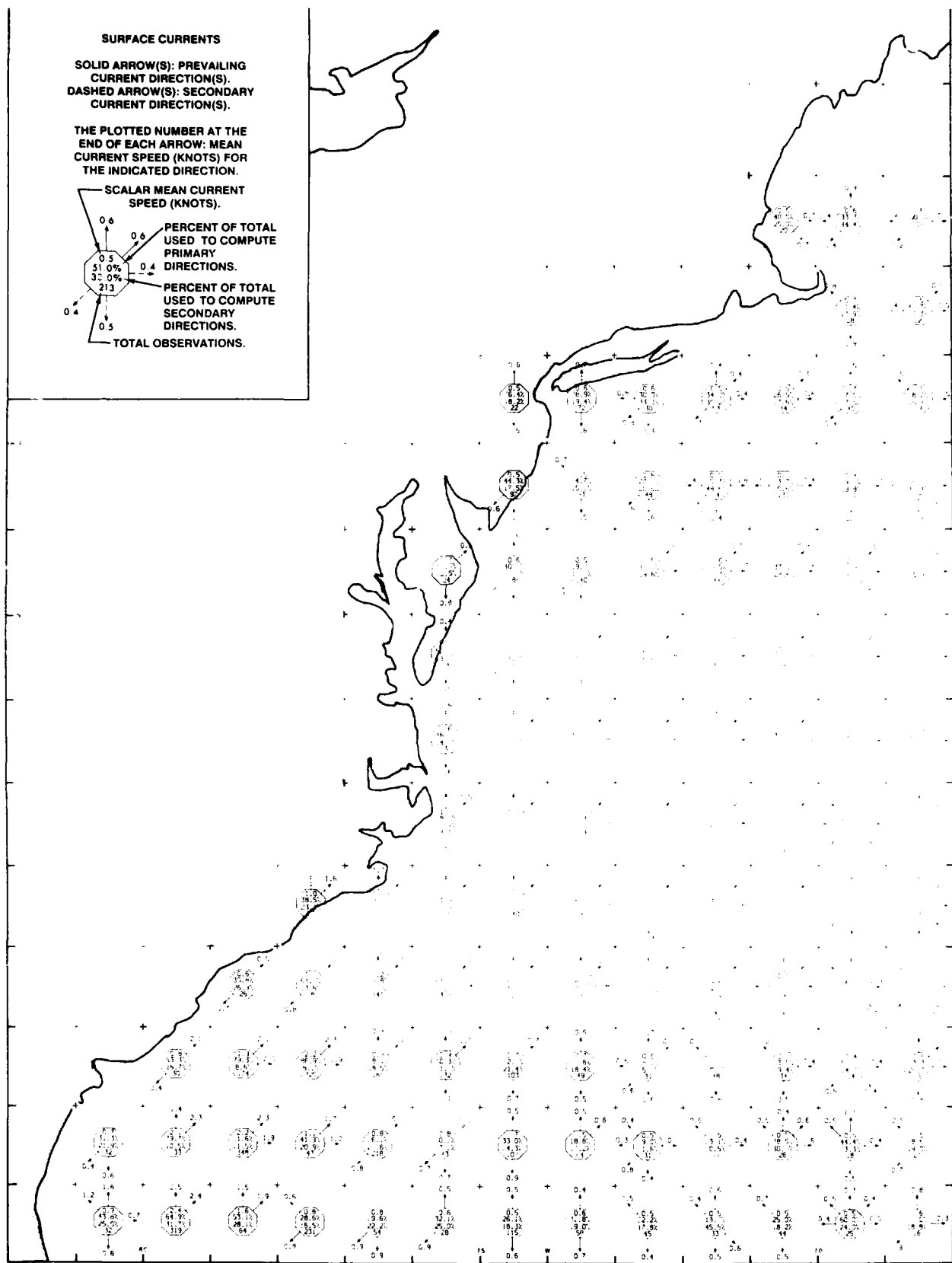
N = OBSERVATION COUNT.

WAVE DATA FOR THESE TABLES
WERE SELECTED FROM THE HIGHER
OF SEA OR SWELL WHEN BOTH
WERE REPORTED.



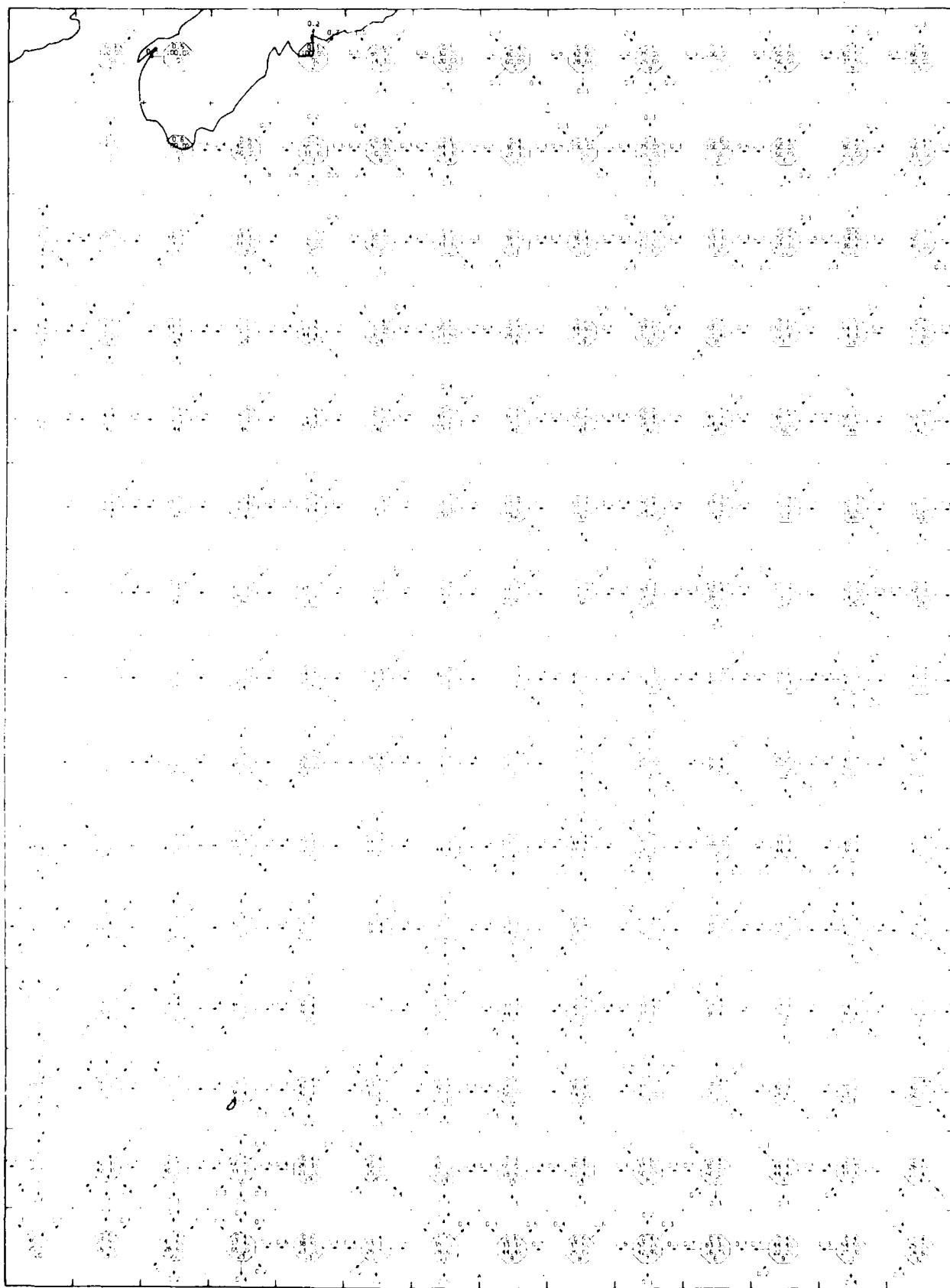






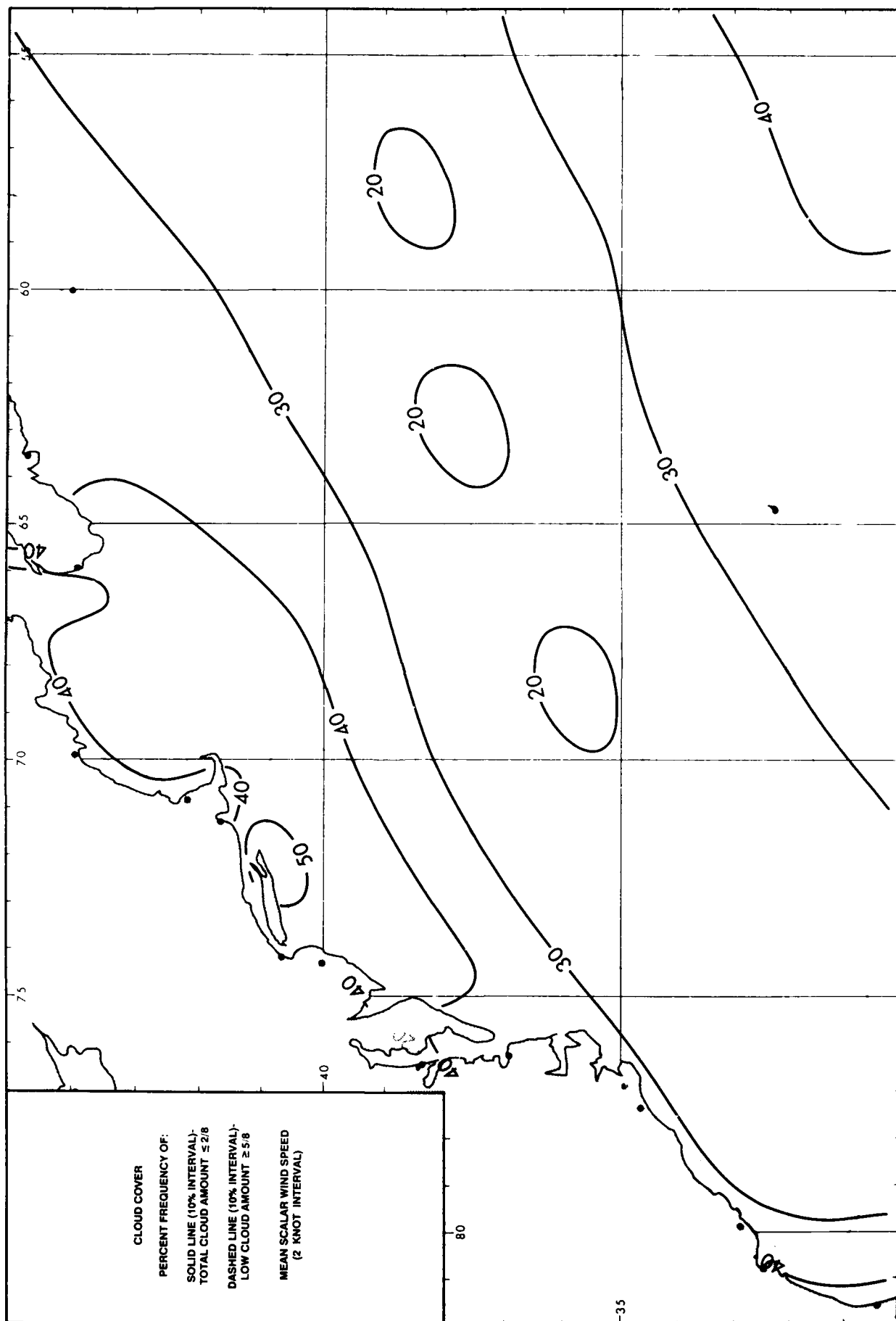
June

Surface Currents



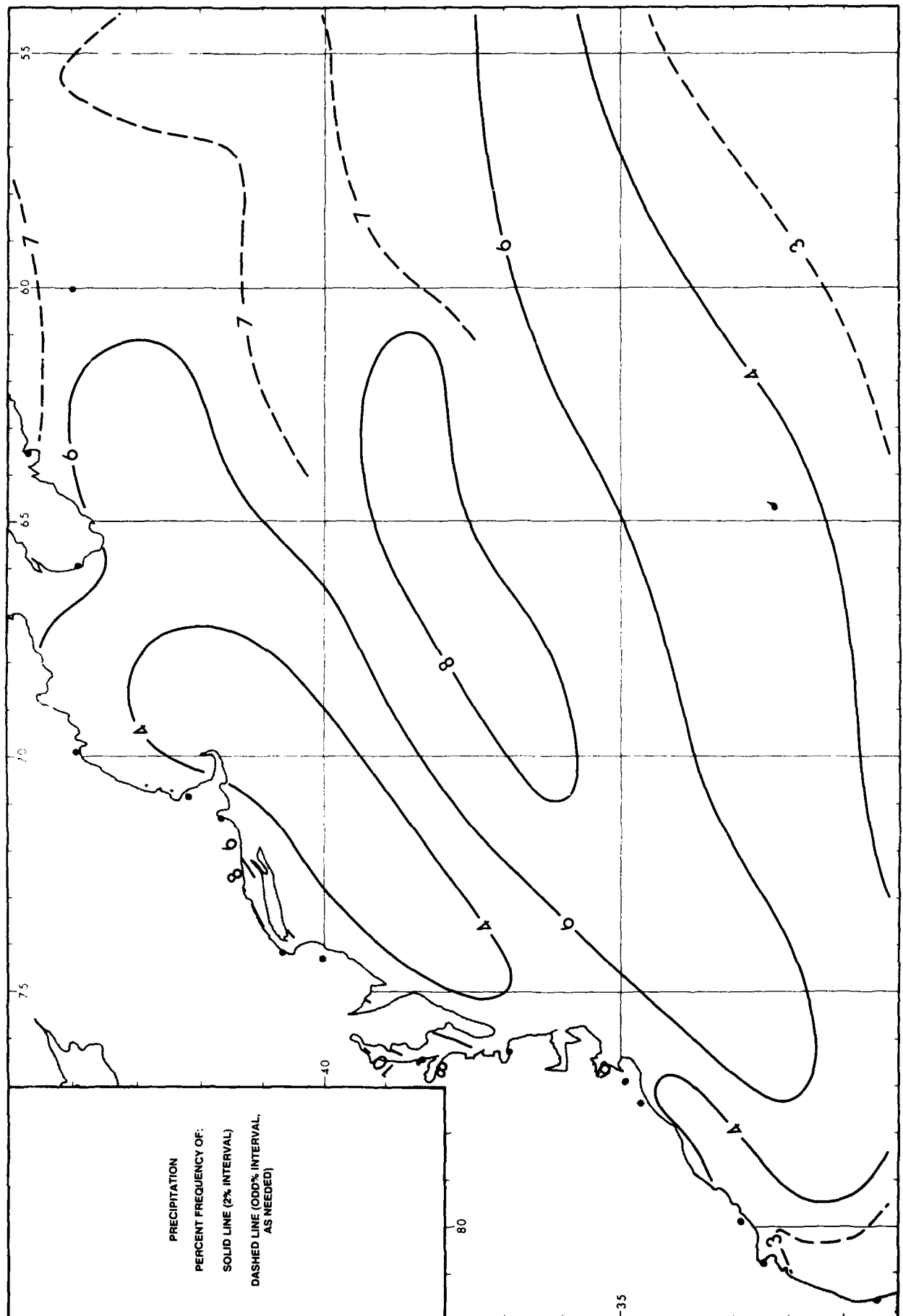
July

Clouds



July

Precipitation

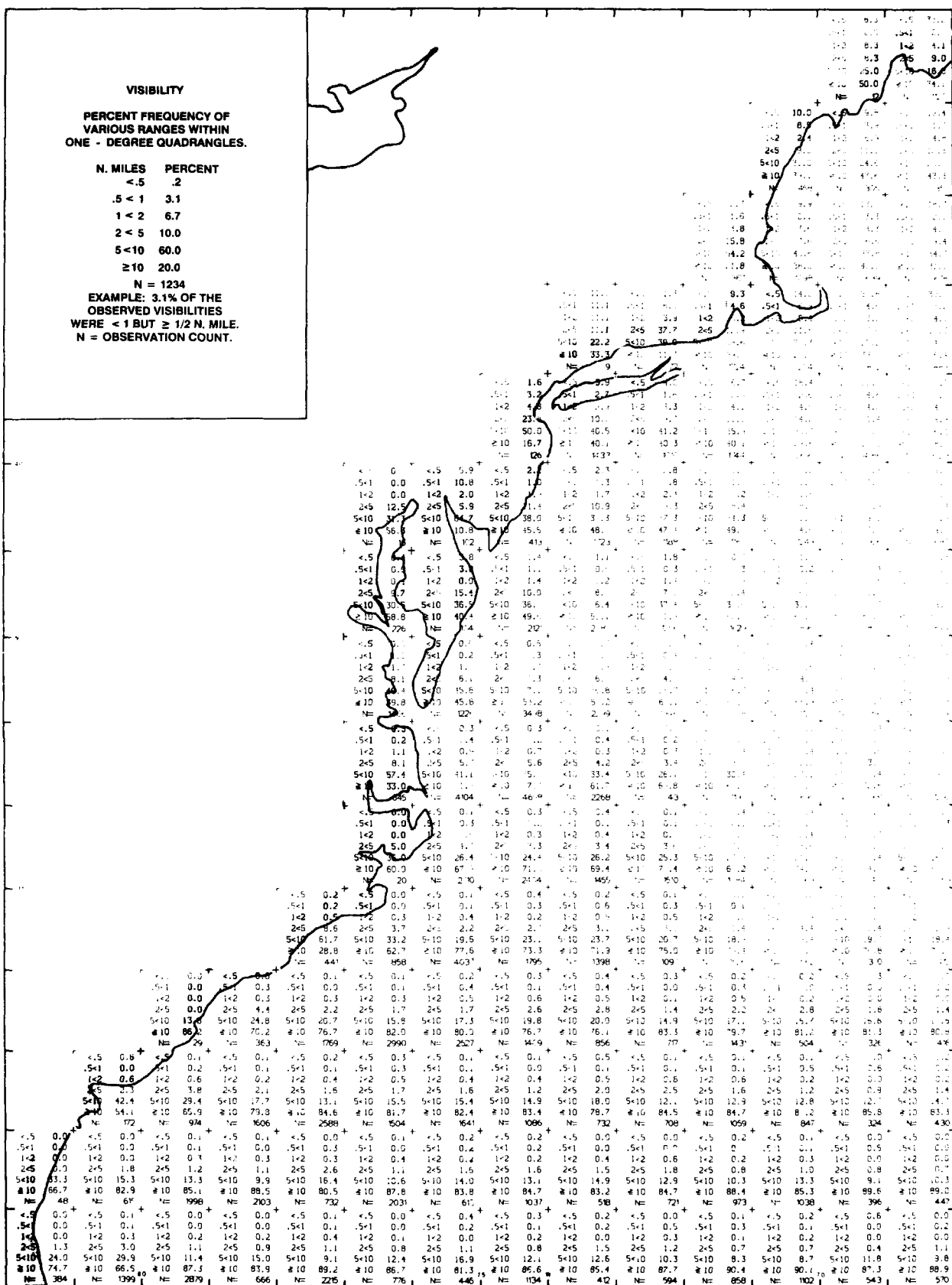


VISIBILITY
PERCENT FREQUENCY OF
VARIOUS RANGES WITHIN
ONE - DEGREE QUADRANGLES.

N. MILES PERCENT
< .5 .2
.5 < 1 3.1
1 < 2 6.7
2 < 5 10.0
5 < 10 60.0
≥ 10 20.0

N = 1234

EXAMPLE: 3.1% OF THE
OBSERVED VISIBILITIES
WERE < 1 BUT ≥ 1/2 N. MILE.
N = OBSERVATION COUNT.

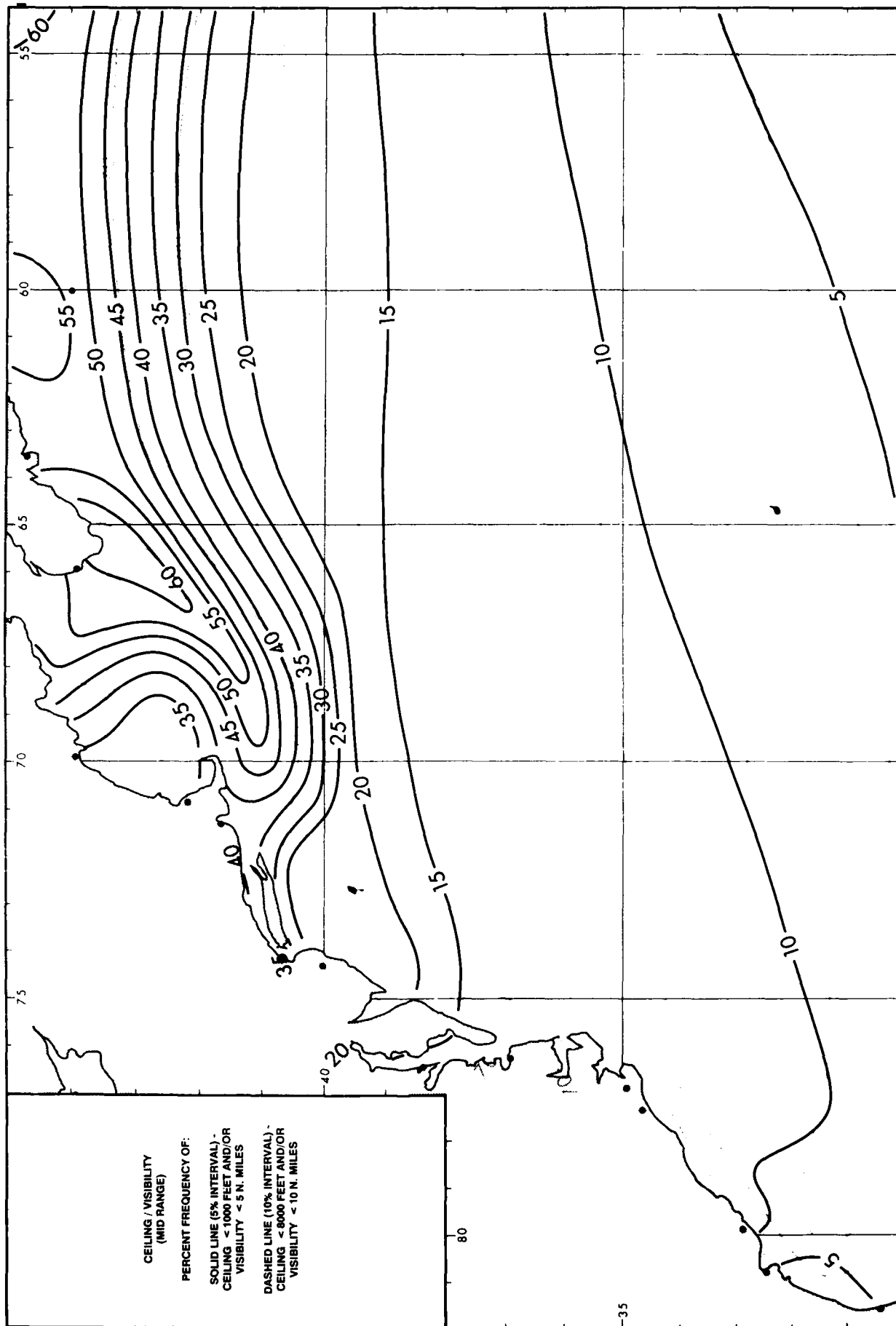


Visibility

5.1	30.7	5.1	27.4	5.1	10.8	5.1	19.5	5.1	28.1	5.1	28.1	5.1	29.6	5.1	40.1	5.1	29.6	5.1	34.4	5.1	41.7	5.1	34.2	5.1	33.5	5.1	34.1
5.1	2.5	5.1	3.0	5.1	1.8	5.1	5.5	5.1	2.8	5.1	3.4	5.1	2.4	5.1	3.1	5.1	2.4	5.1	2.4	5.1	4.1	5.1	4.5	5.1	6.3	5.1	5.2
1-2	8.1	1-2	1.1	1-2	4.4	1-2	1.4	1-2	7.1	1-2	1.3	1-2	3.5	1-2	2.8	1-2	4.8	1-2	2.5	1-2	2.5	1-2	2.4	1-2	3.0	1-2	3.2
2-5	5.9	2-5	9.2	2-5	8.8	2-5	6.8	2-5	6.7	2-5	6.4	2-5	8.7	2-5	9.3	2-5	12.1	2-5	10.0	2-5	5.9	2-5	1.9	2-5	6.5	2-5	7.5
5-10	17.7	5-10	18.5	5-10	30.4	5-10	21.4	5-10	20.0	5-10	19.2	5-10	22.1	5-10	19.3	5-10	24.9	5-10	19.0	5-10	19.1	5-10	19.8	5-10	21.3	5-10	21.4
10-18	39.8	10-18	37.8	10-18	34.8	10-18	30.5	10-18	39.2	10-18	38.5	10-18	33.6	10-18	25.4	10-18	26.3	10-18	31.7	10-18	26.3	10-18	33.3	10-18	29.5	10-18	28.6
NE	683	NE	3437	NE	227	NE	524	NE	2823	NE	1994	NE	156	NE	145	NE	2547	NE	643	NE	424	NE	405	NE	496	NE	496
5.1	32.9	5.1	37.7	5.1	36.0	5.1	32.4	5.1	27.7	5.1	26.9	5.1	26.0	5.1	32.2	5.1	31.0	5.1	27.5	5.1	25.6	5.1	23.9	5.1	21.5	5.1	18.9
5.1	3.4	5.1	3.4	5.1	3.4	5.1	3.3	5.1	4.6	5.1	3.8	5.1	4.4	5.1	3.3	5.1	3.4	5.1	4.2	5.1	4.5	5.1	3.8	5.1	3.1	5.1	4.7
1-2	4.1	1-2	4.2	1-2	3.3	1-2	2.9	1-2	3.9	1-2	2.5	1-2	4.3	1-2	3.8	1-2	4.2	1-2	2.2	1-2	5.3	1-2	2.8	1-2	3.3	1-2	2.5
2-5	9.4	2-5	8.5	2-5	9.5	2-5	6.5	2-5	8.1	2-5	7.3	2-5	9.4	2-5	8.5	2-5	9.0	2-5	7.2	2-5	7.2	2-5	10.2	2-5	7.1	2-5	5.3
5-10	15.7	5-10	15.0	5-10	21.2	5-10	20.0	5-10	23.1	5-10	21.3	5-10	23.0	5-10	19.3	5-10	20.0	5-10	25.3	5-10	14.4	5-10	13.9	5-10	16.2	5-10	26.2
10-18	34.4	10-18	31.2	10-18	24.9	10-18	34.8	10-18	34.1	10-18	36.1	10-18	32.8	10-18	32.9	10-18	31.9	10-18	31.1	10-18	31.1	10-18	39.4	10-18	36.7	10-18	42.3
NE	1433	NE	3284	NE	1498	NE	1996	NE	990	NE	1433	NE	1480	NE	372	NE	1730	NE	546	NE	419	NE	394	NE	363	NE	399
5.1	32.9	5.1	37.4	5.1	36.2	5.1	25.8	5.1	22.6	5.1	18.6	5.1	17.2	5.1	15.9	5.1	13.5	5.1	7.8	5.1	4.5	5.1	7.1	5.1	8.9	5.1	8.1
5.1	2.8	5.1	3.6	5.1	3.3	5.1	3.2	5.1	2.8	5.1	3.2	5.1	2.9	5.1	2.1	5.1	2.7	5.1	3.2	5.1	3.1	5.1	2.8	5.1	2.7	5.1	2.6
1-2	3.4	1-2	3.6	1-2	3.5	1-2	3.9	1-2	3.1	1-2	2.4	1-2	3.2	1-2	3.2	1-2	2.5	1-2	3.8	1-2	3.8	1-2	4.4	1-2	2.1	1-2	2.7
2-5	9.0	2-5	7.3	2-5	6.8	2-5	9.5	2-5	6.9</																		

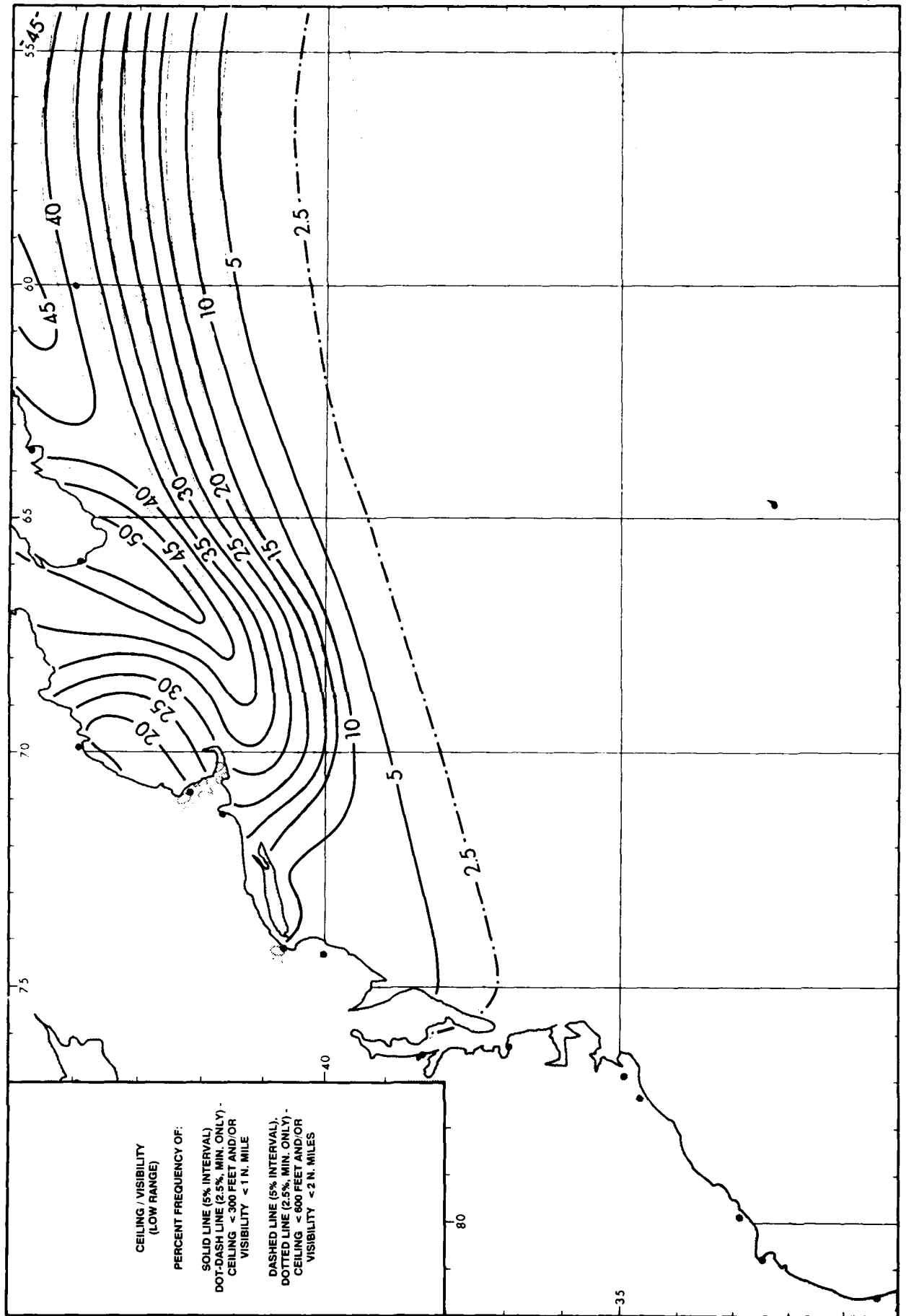
July

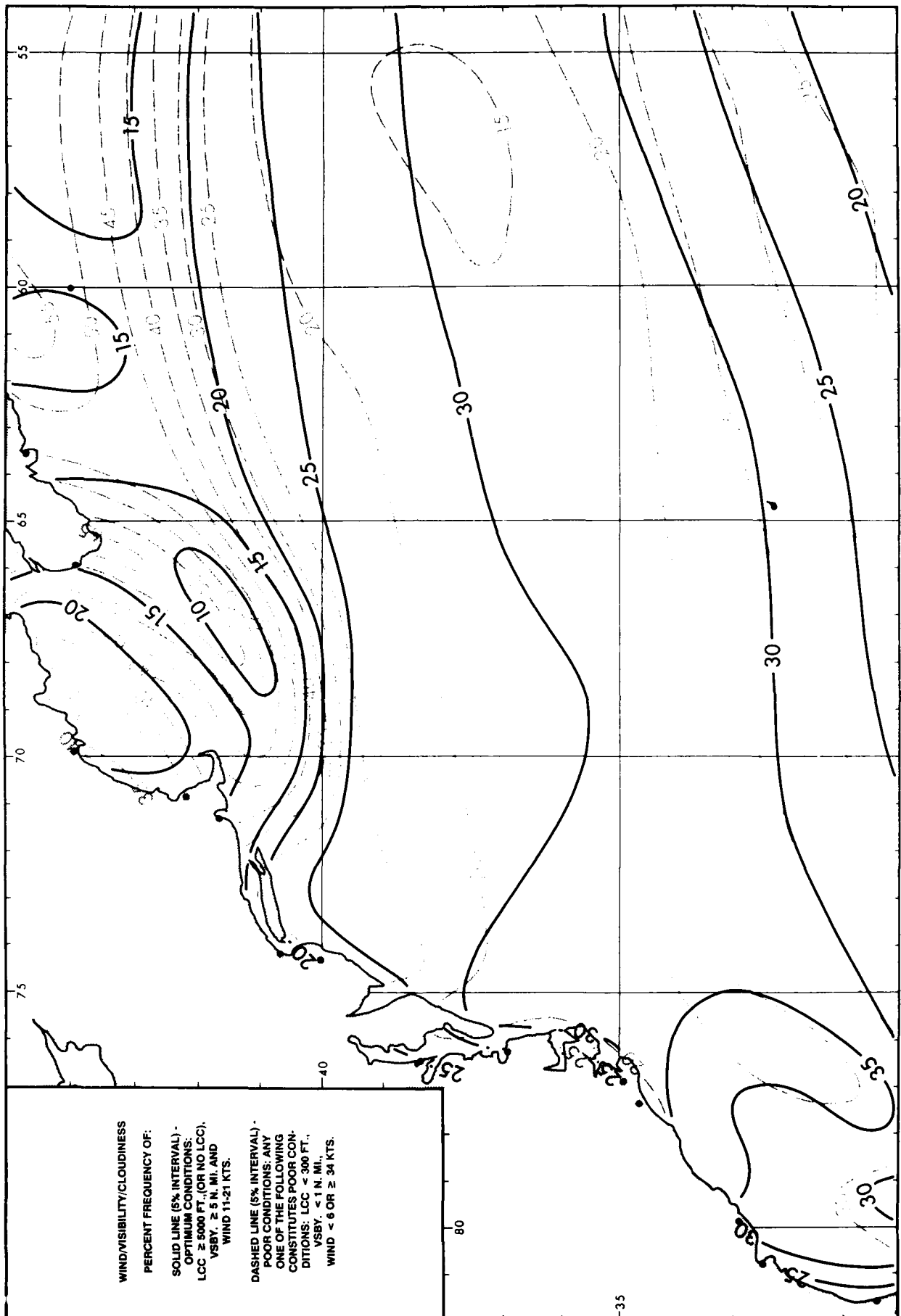
Ceiling / Visibility (Mid Range)



July

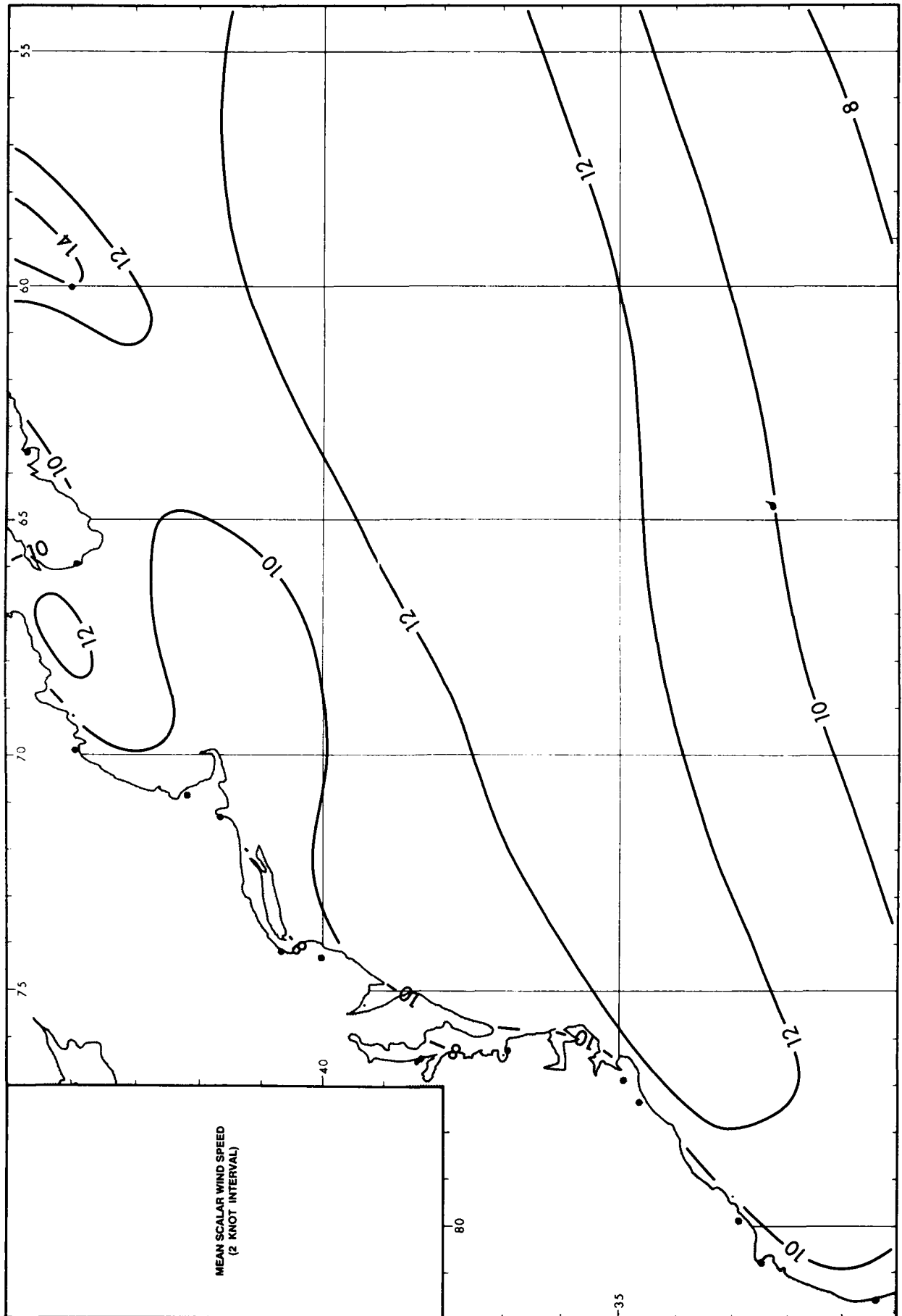
Ceiling / Visibility (Low Range)





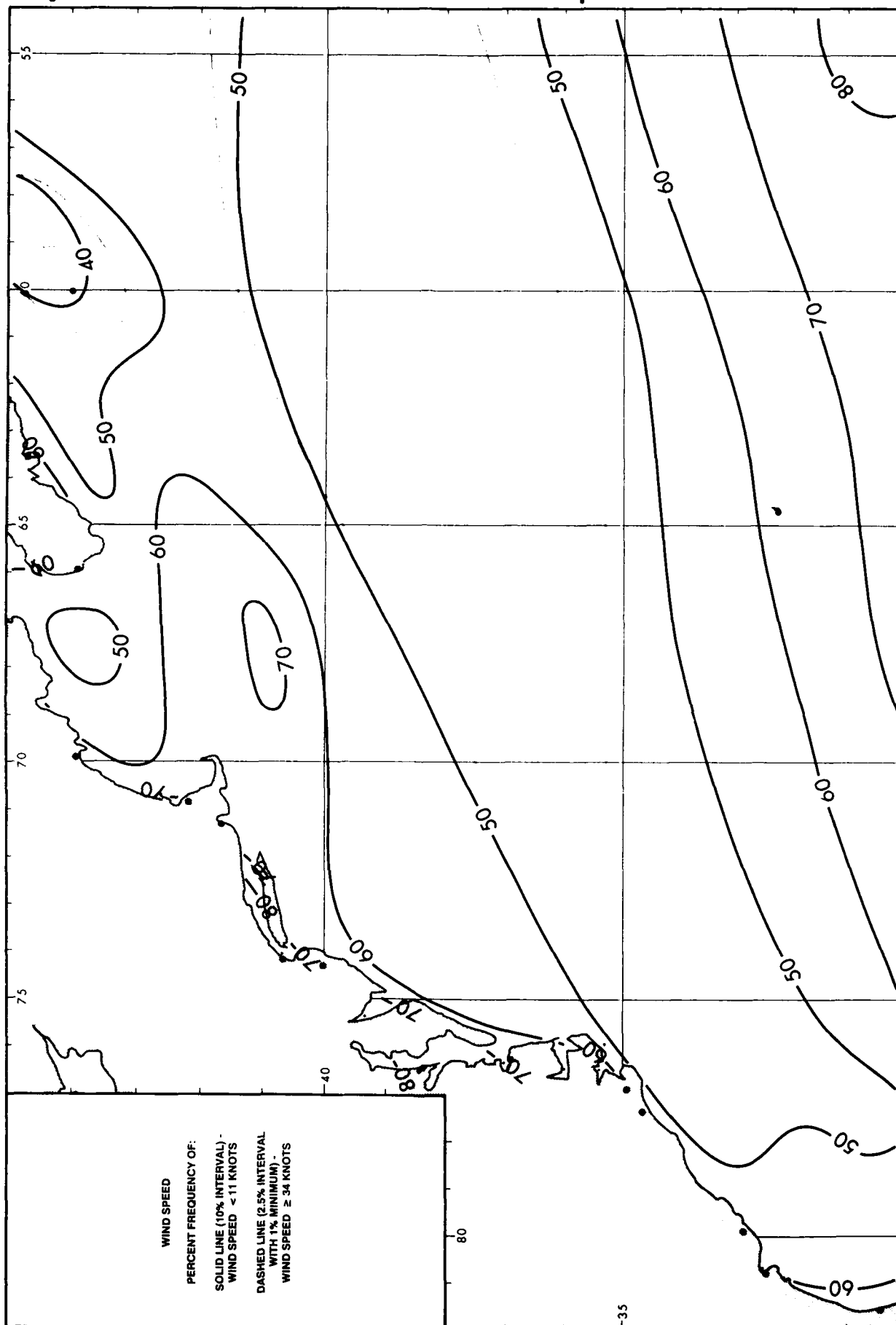
July

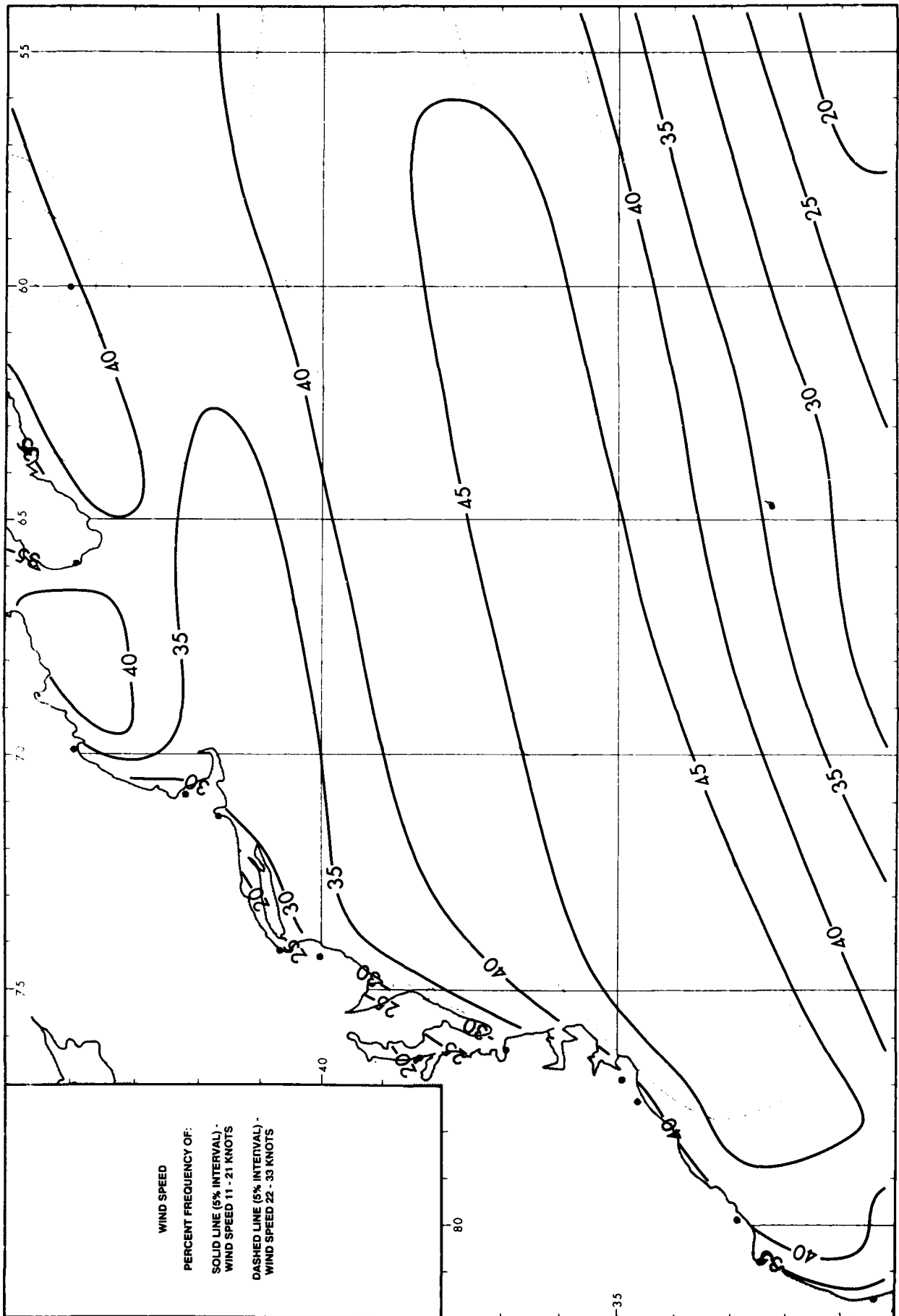
Mean Scalar Wind Speed

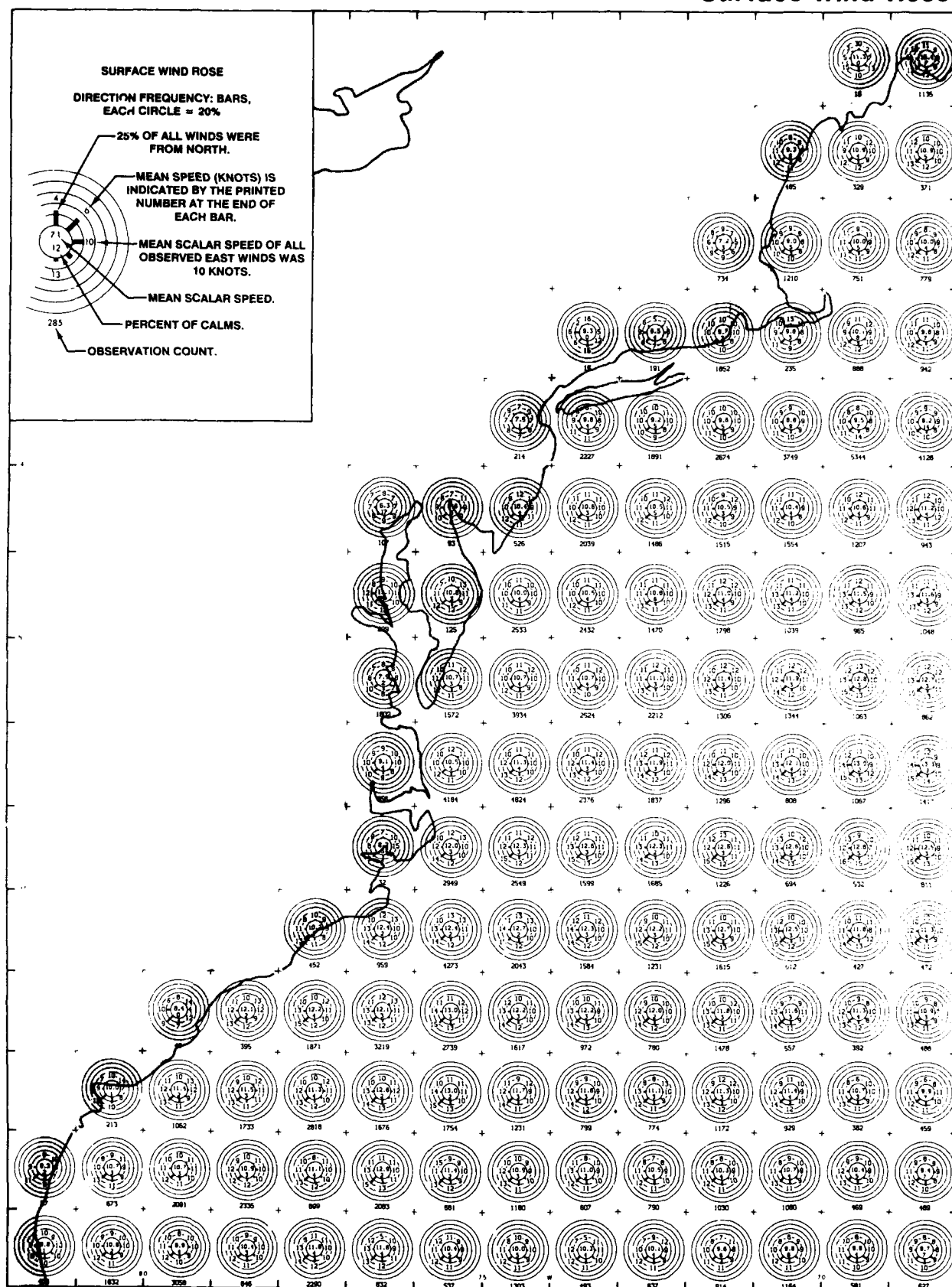


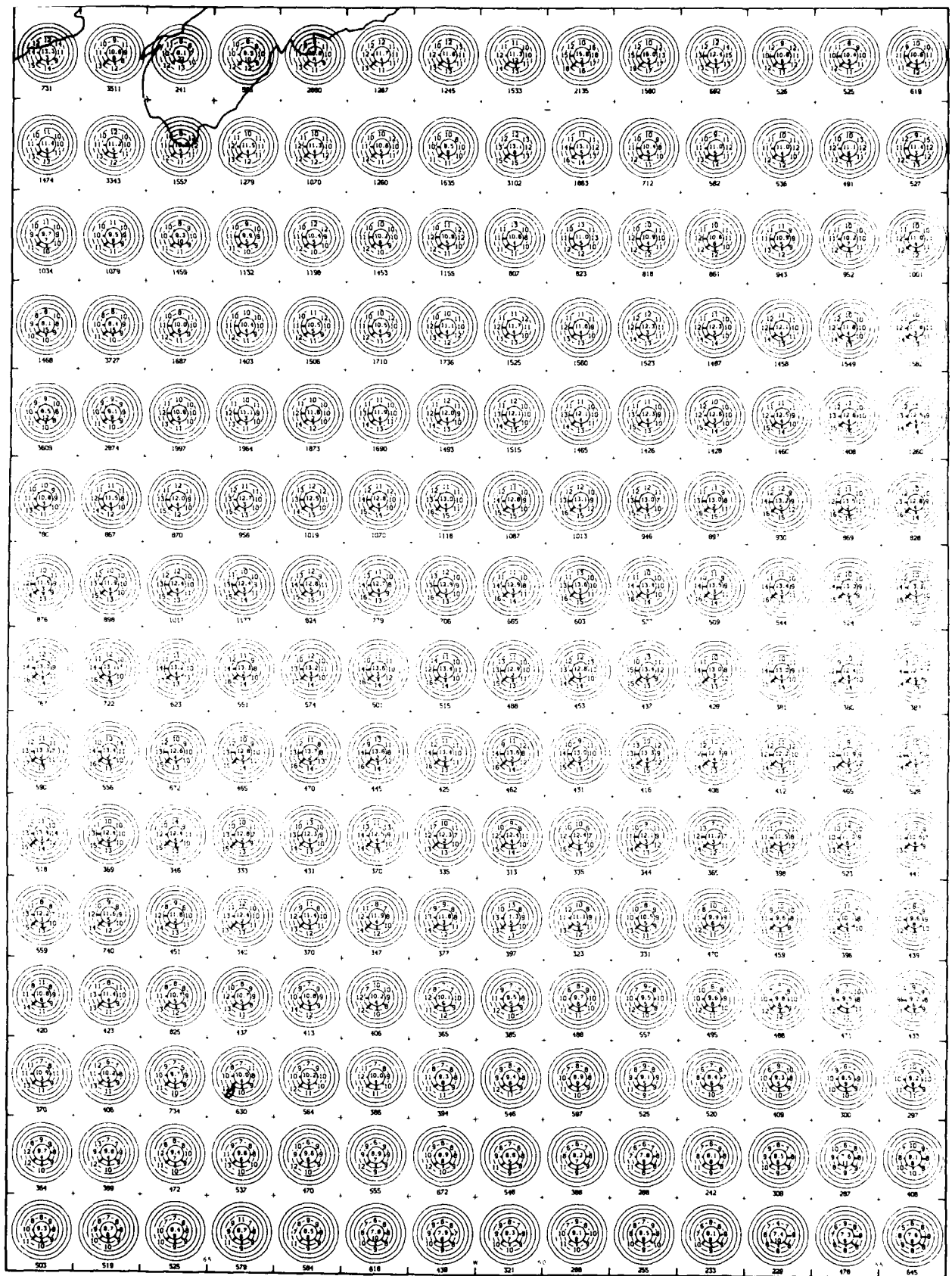
July

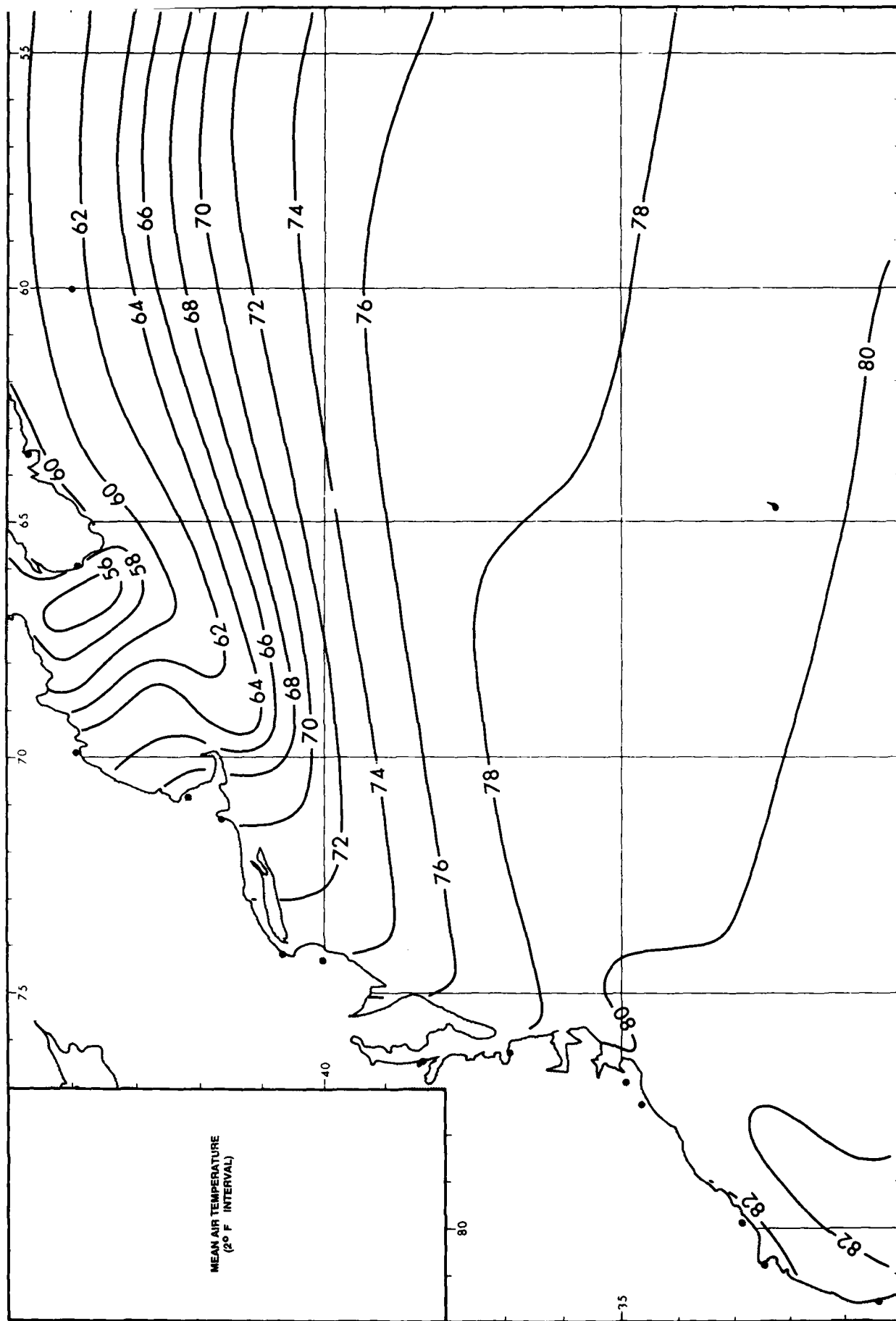
Wind Speed < 11 and ≥ 34 Knots





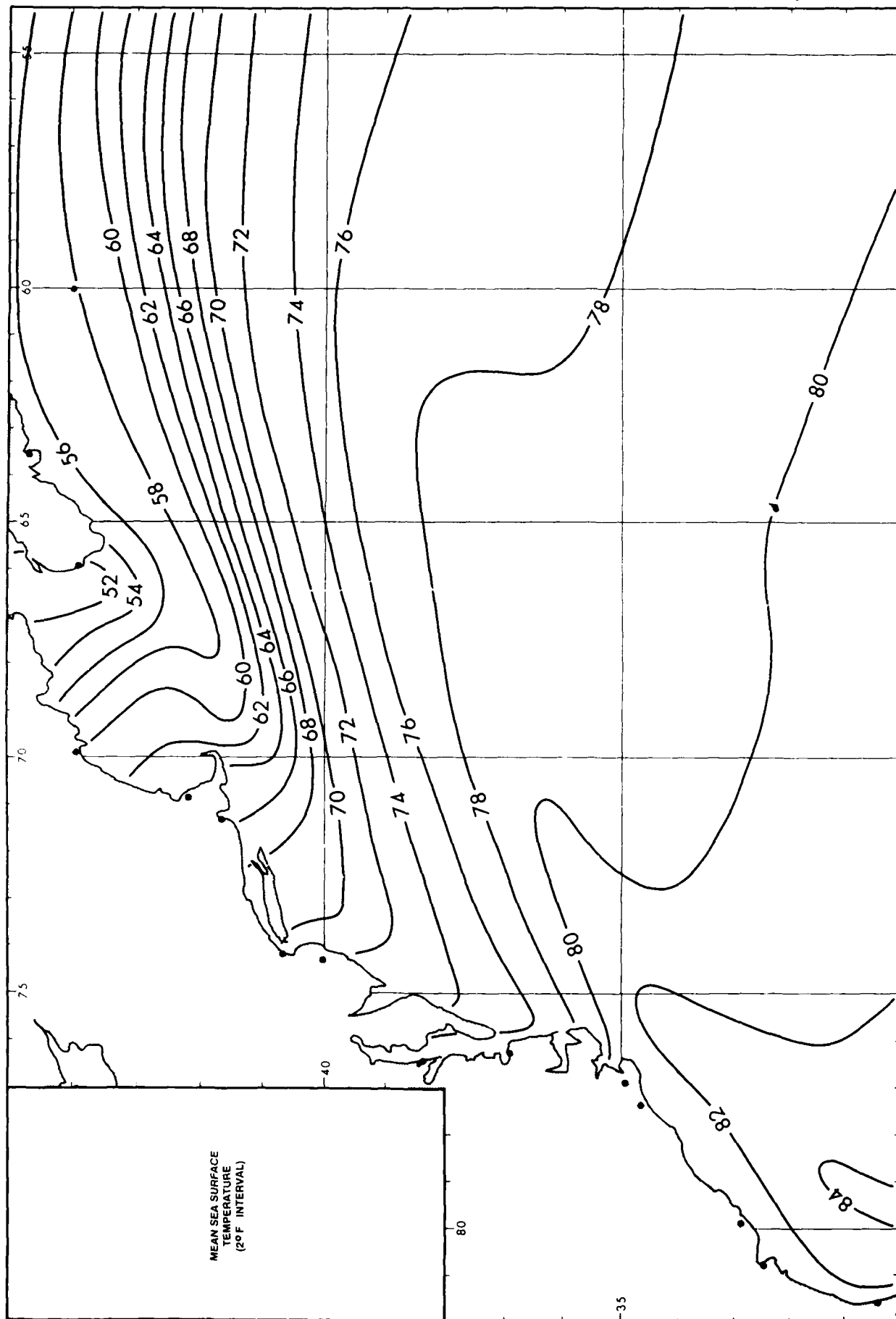






July

Mean Sea Surface Temperature



WAVE HEIGHT - FREQUENCIES
PERCENT FREQUENCY OF VARIOUS
RANGES WITHIN ONE - DEGREE
QUADRANGLES.

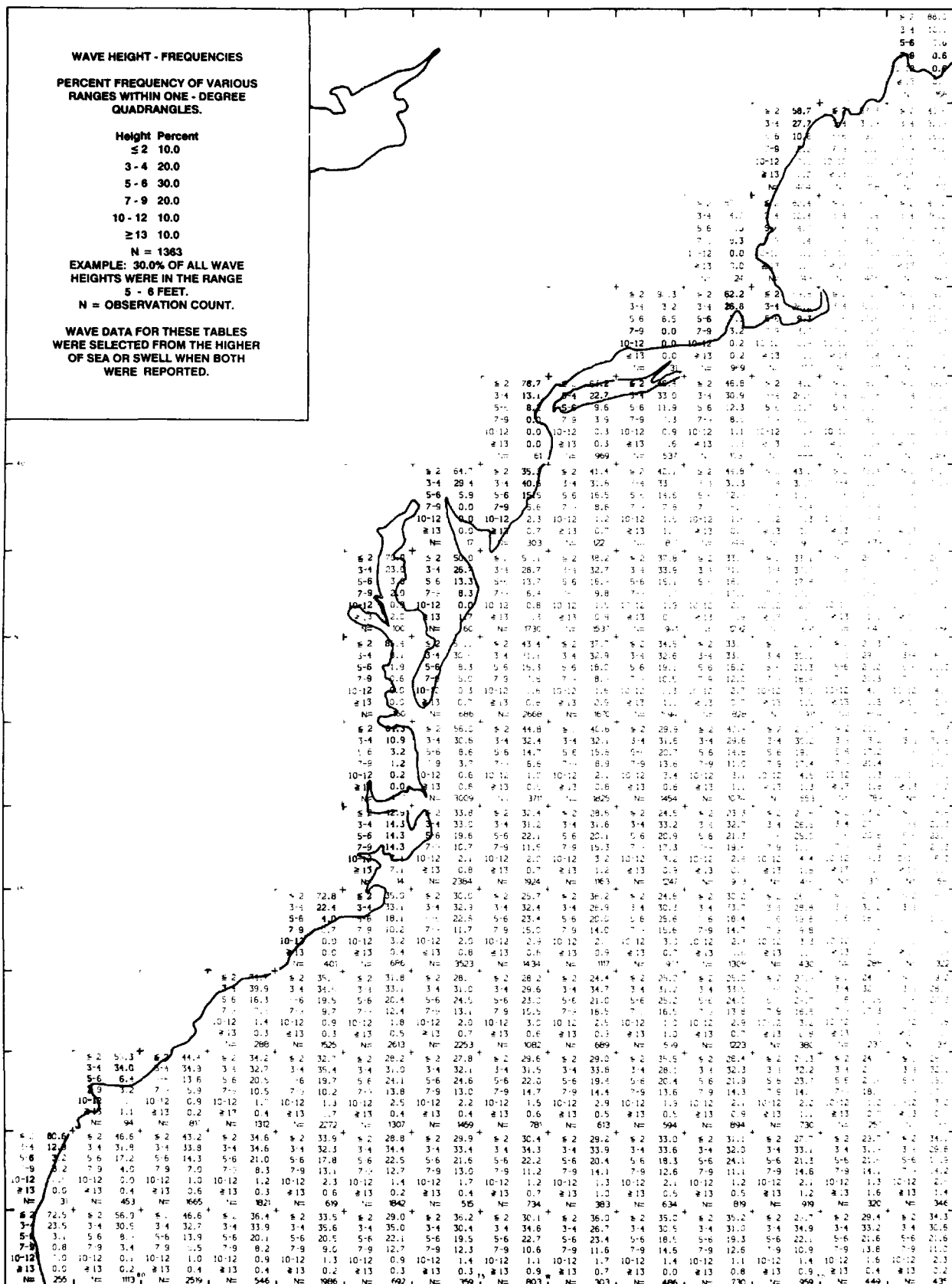
Height Percent
 ≤ 2 10.0
 3-4 20.0
 5-6 30.0
 7-9 20.0
 10-12 10.0
 ≥ 13 10.0

N = 1363

EXAMPLE: 30.0% OF ALL WAVE
 HEIGHTS WERE IN THE RANGE
 5 - 6 FEET.

N = OBSERVATION COUNT.

WAVE DATA FOR THESE TABLES
 WERE SELECTED FROM THE HIGHER
 OF SEA OR SWELL WHEN BOTH
 WERE REPORTED.

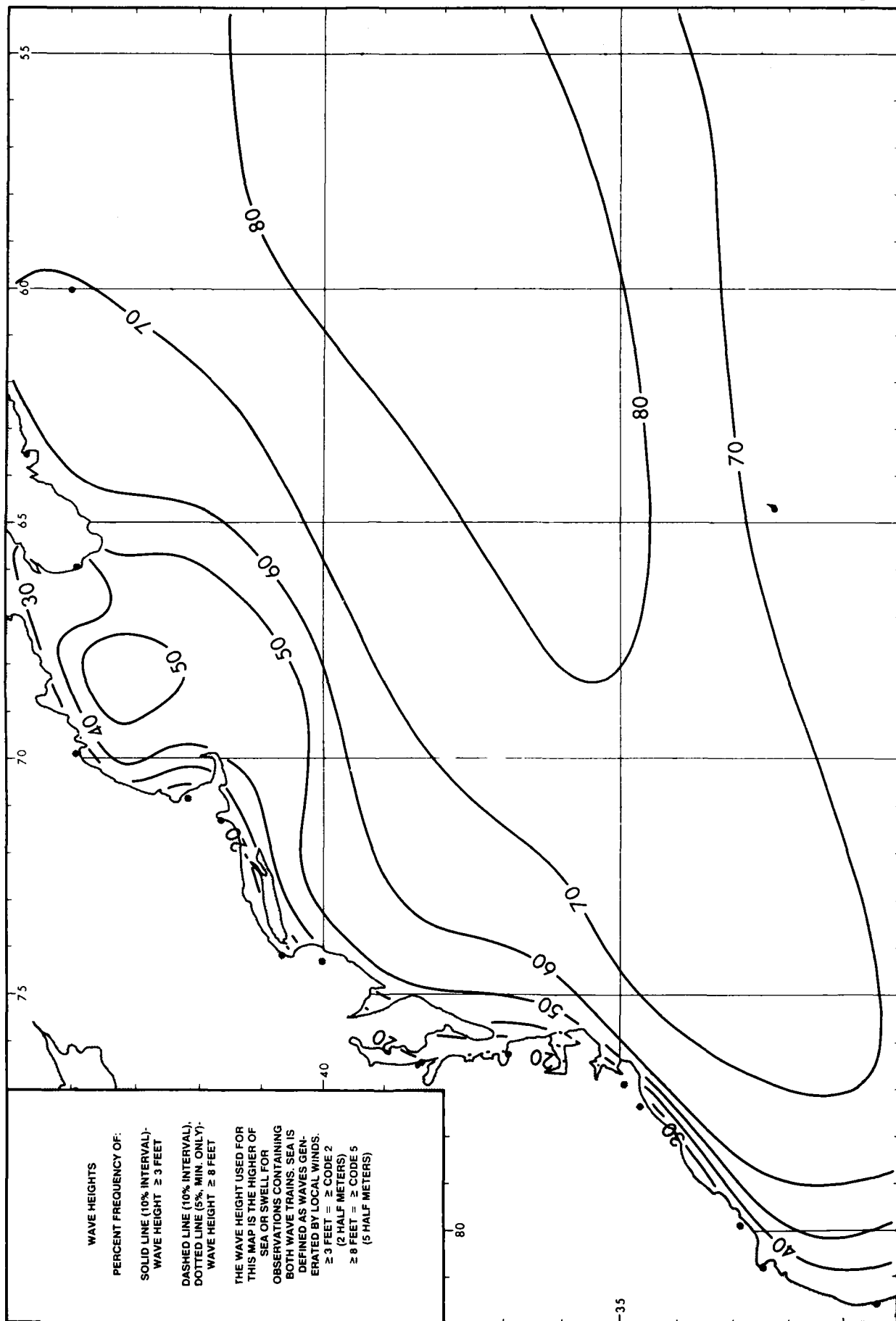


Wave Height

137

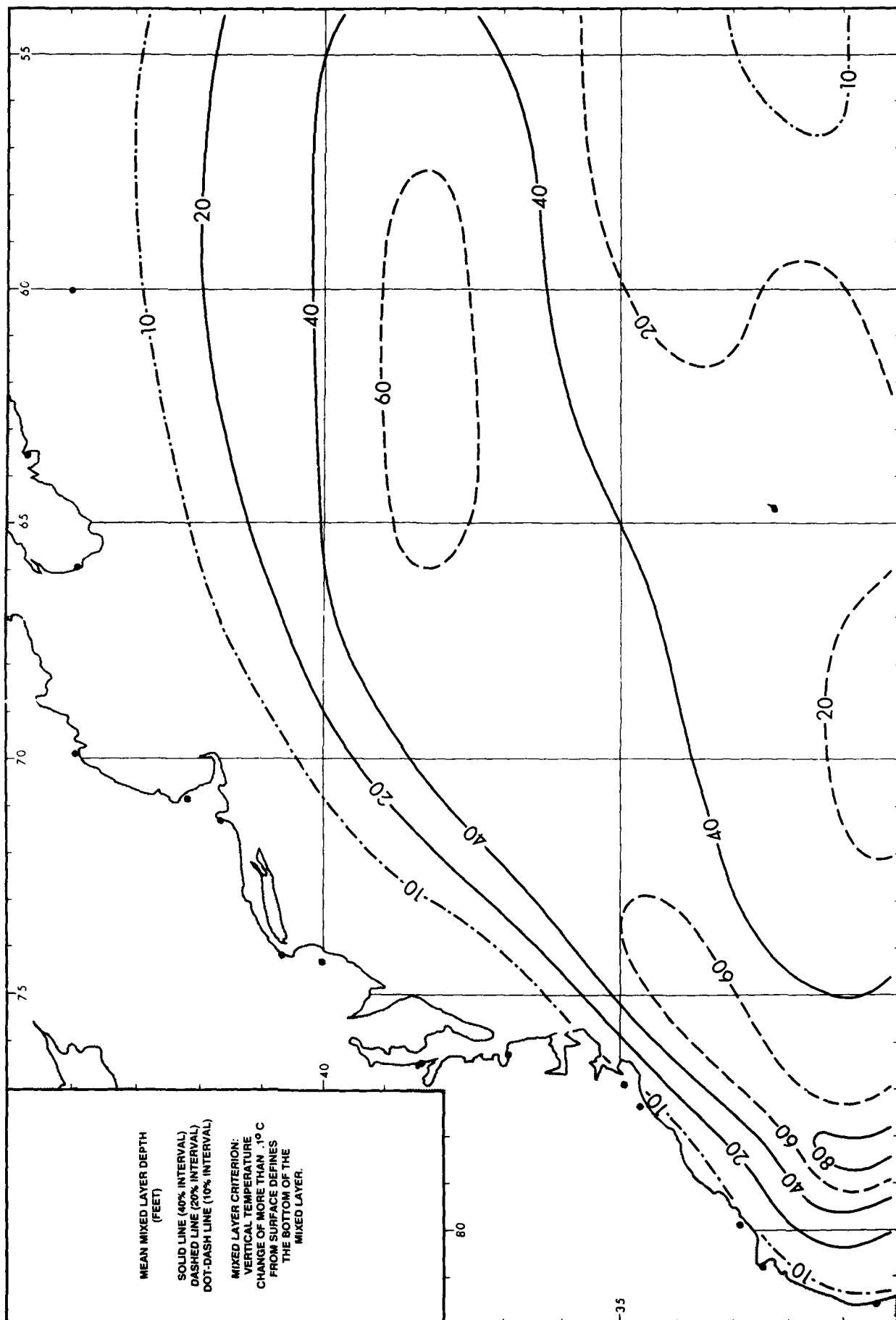
July

Wave Height



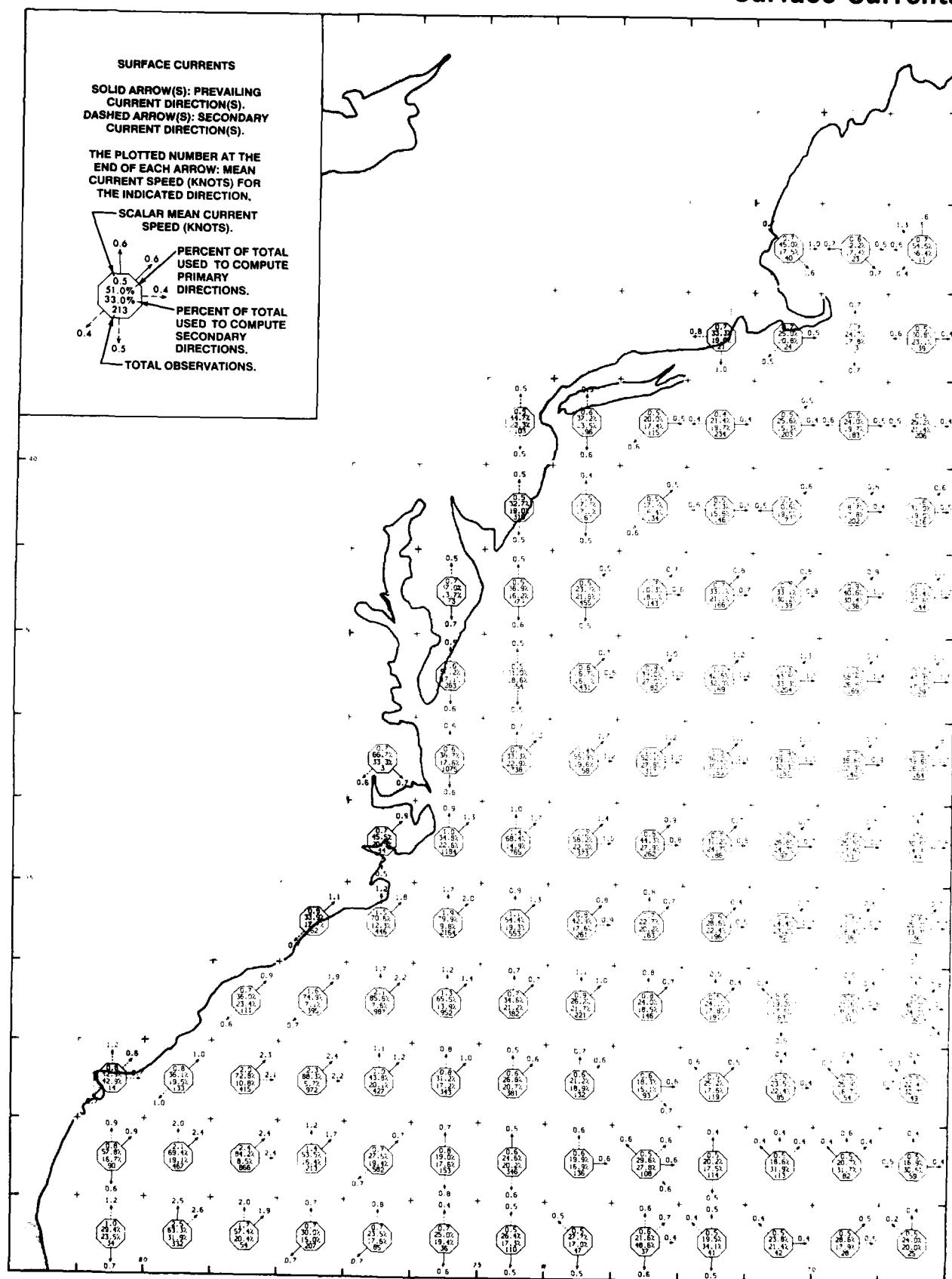
July

Mean Mixed Layer Depth



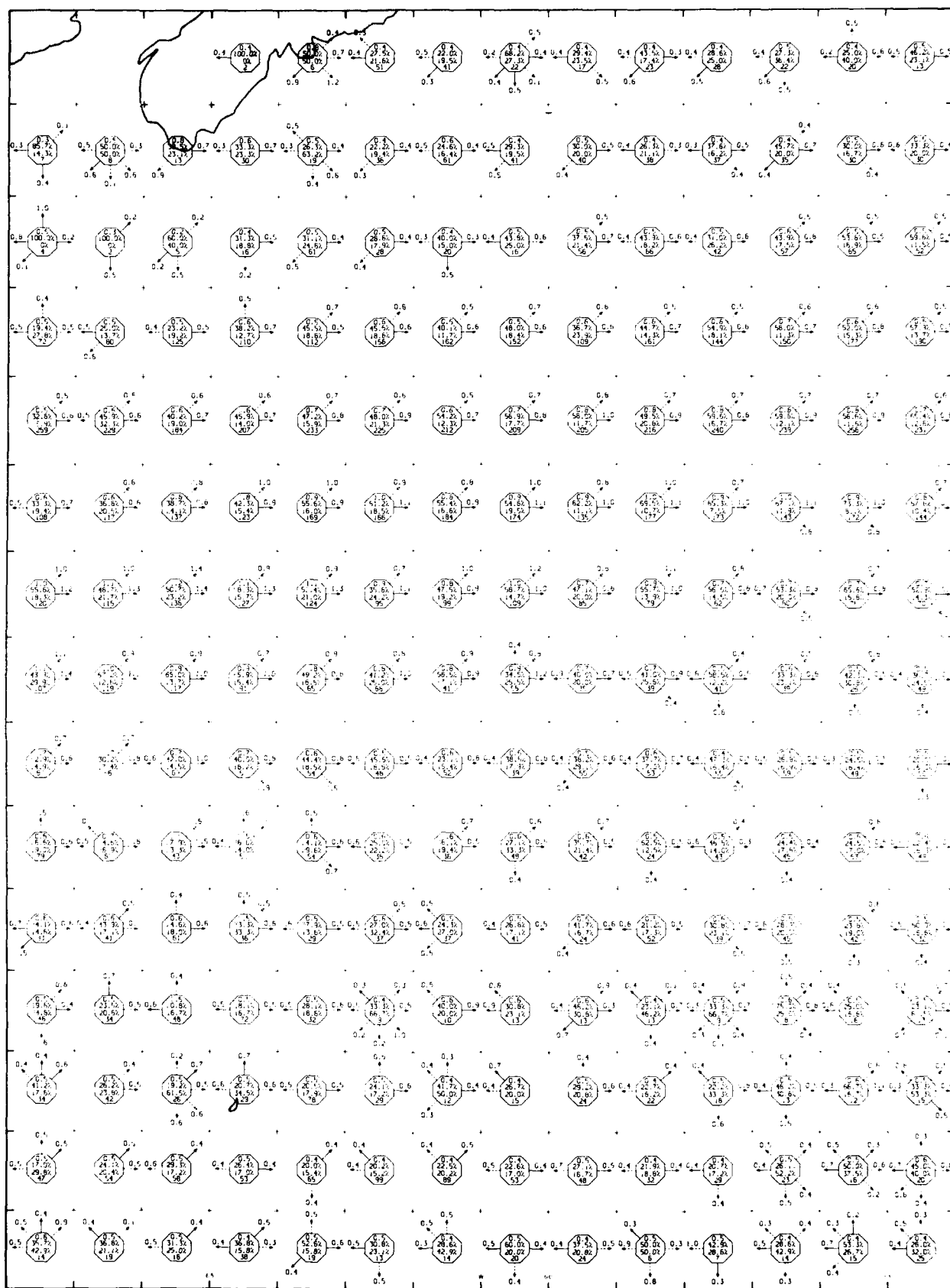
July

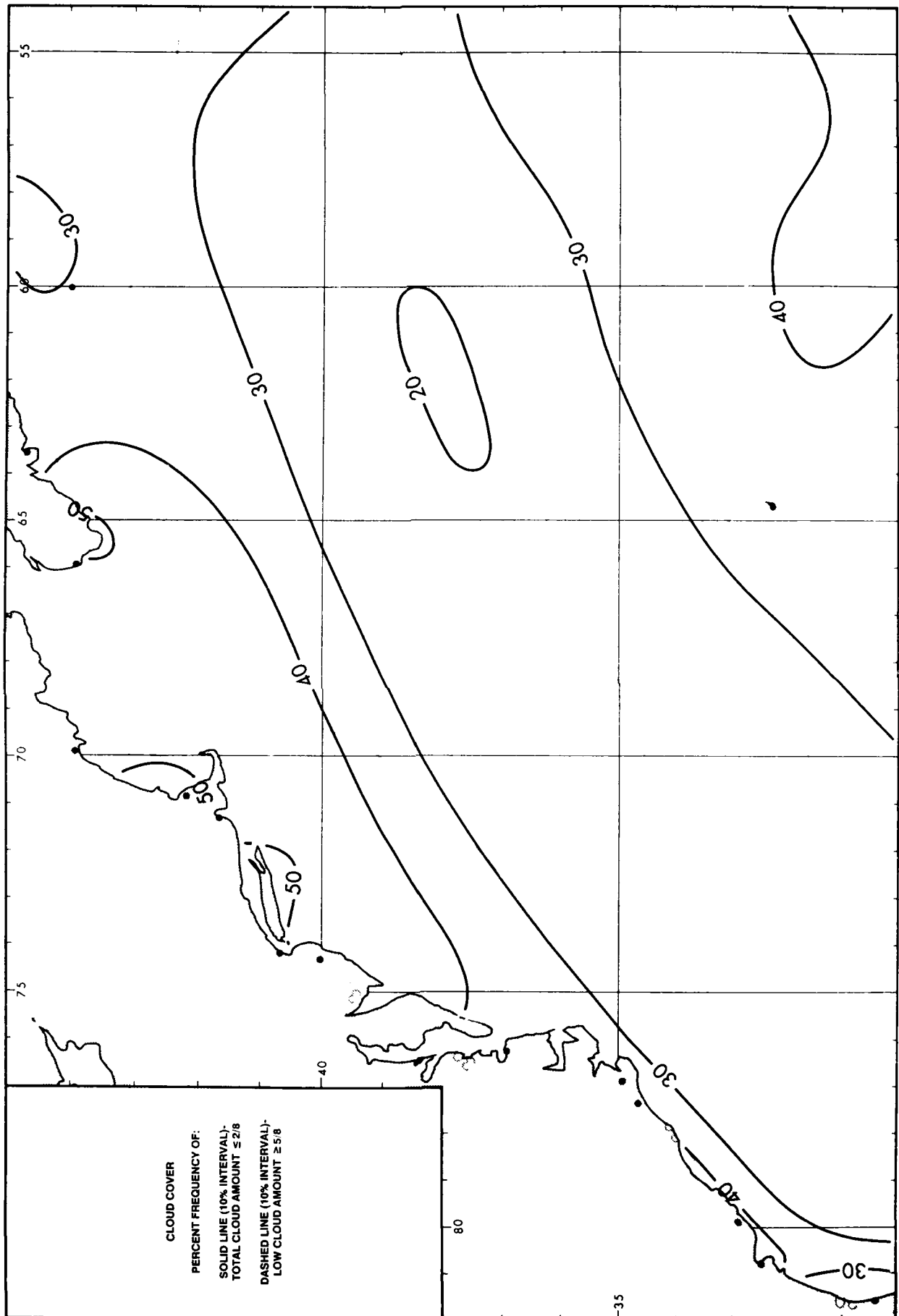
Surface Currents



July

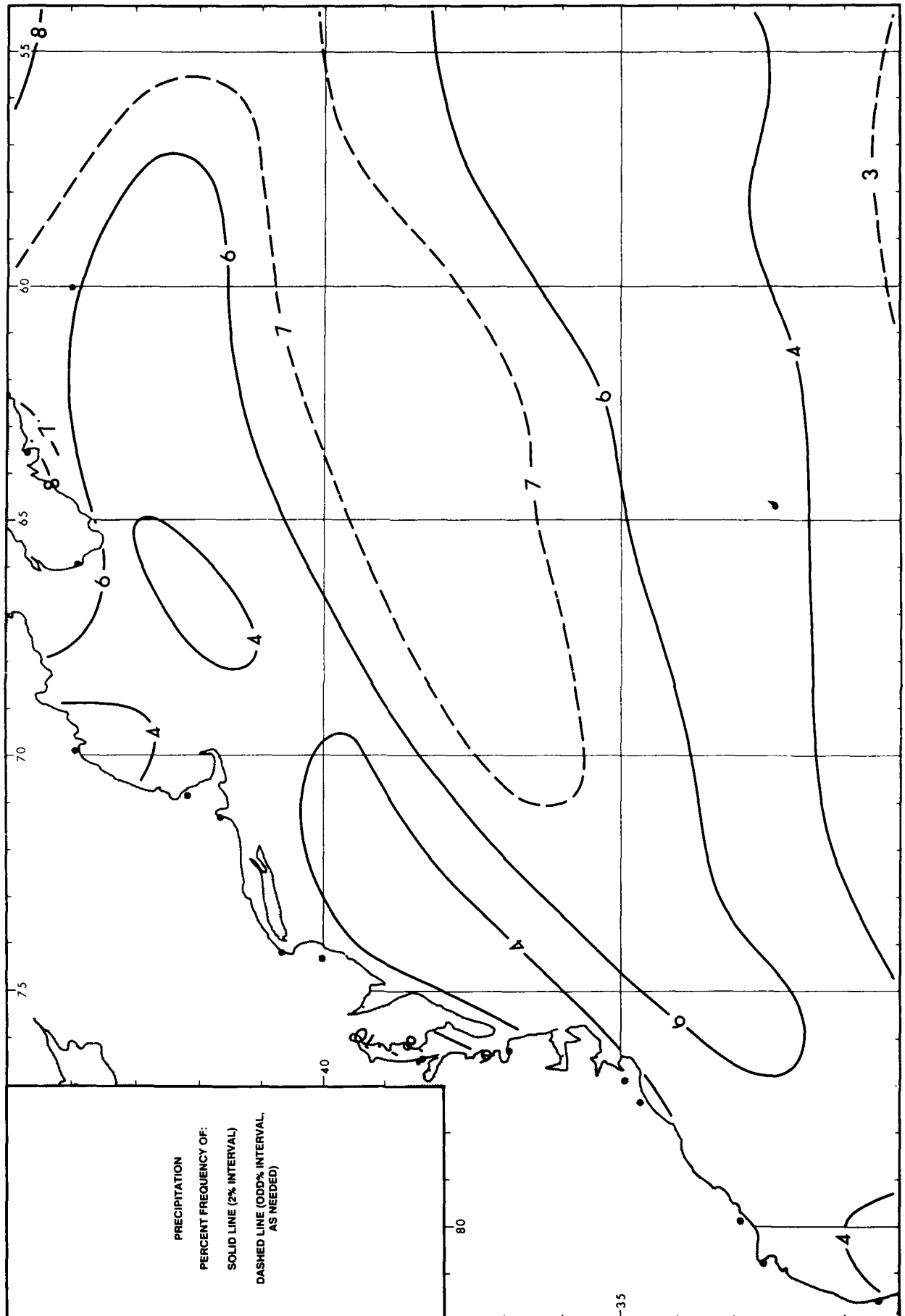
Surface Currents





August

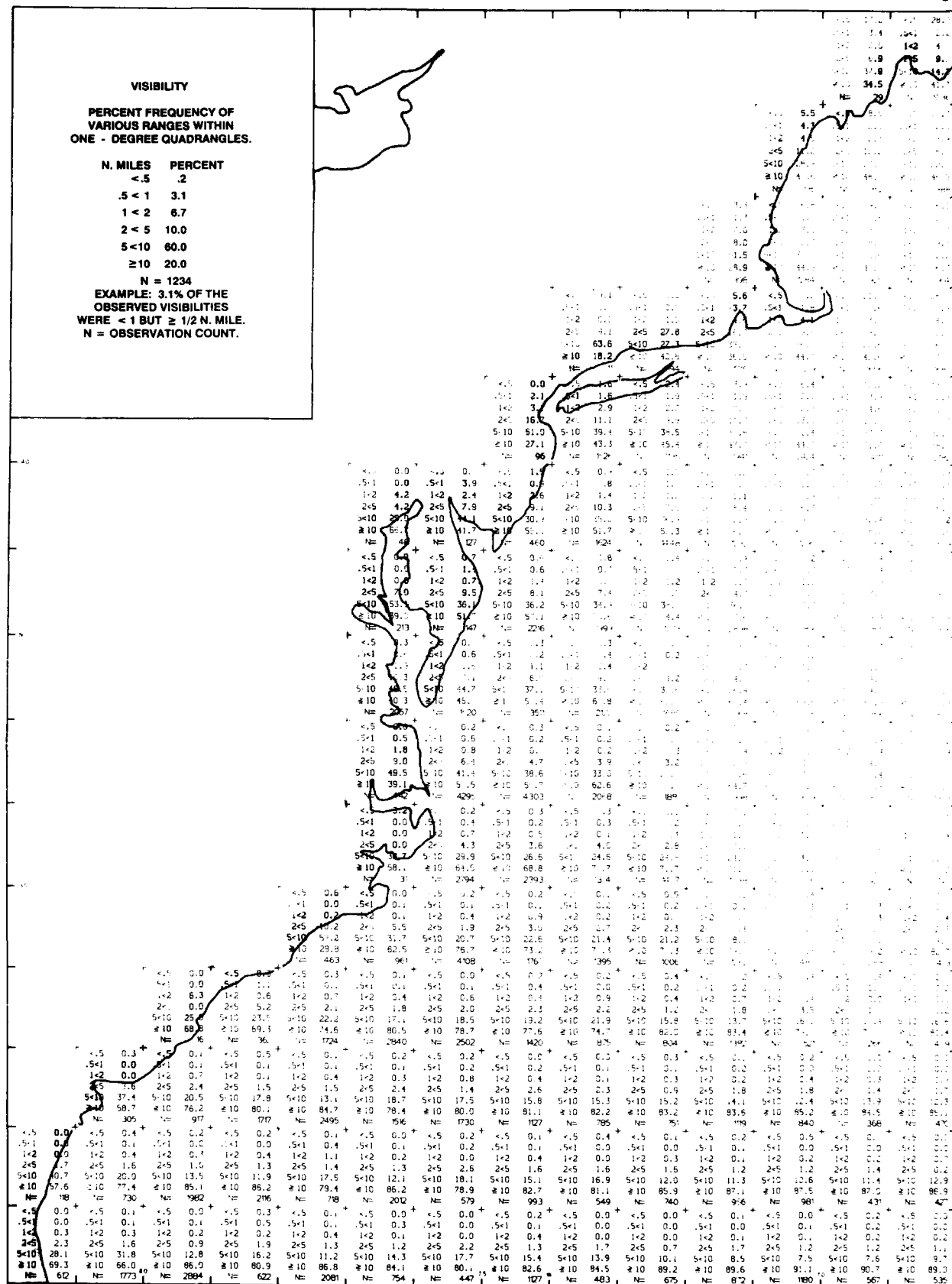
Precipitation



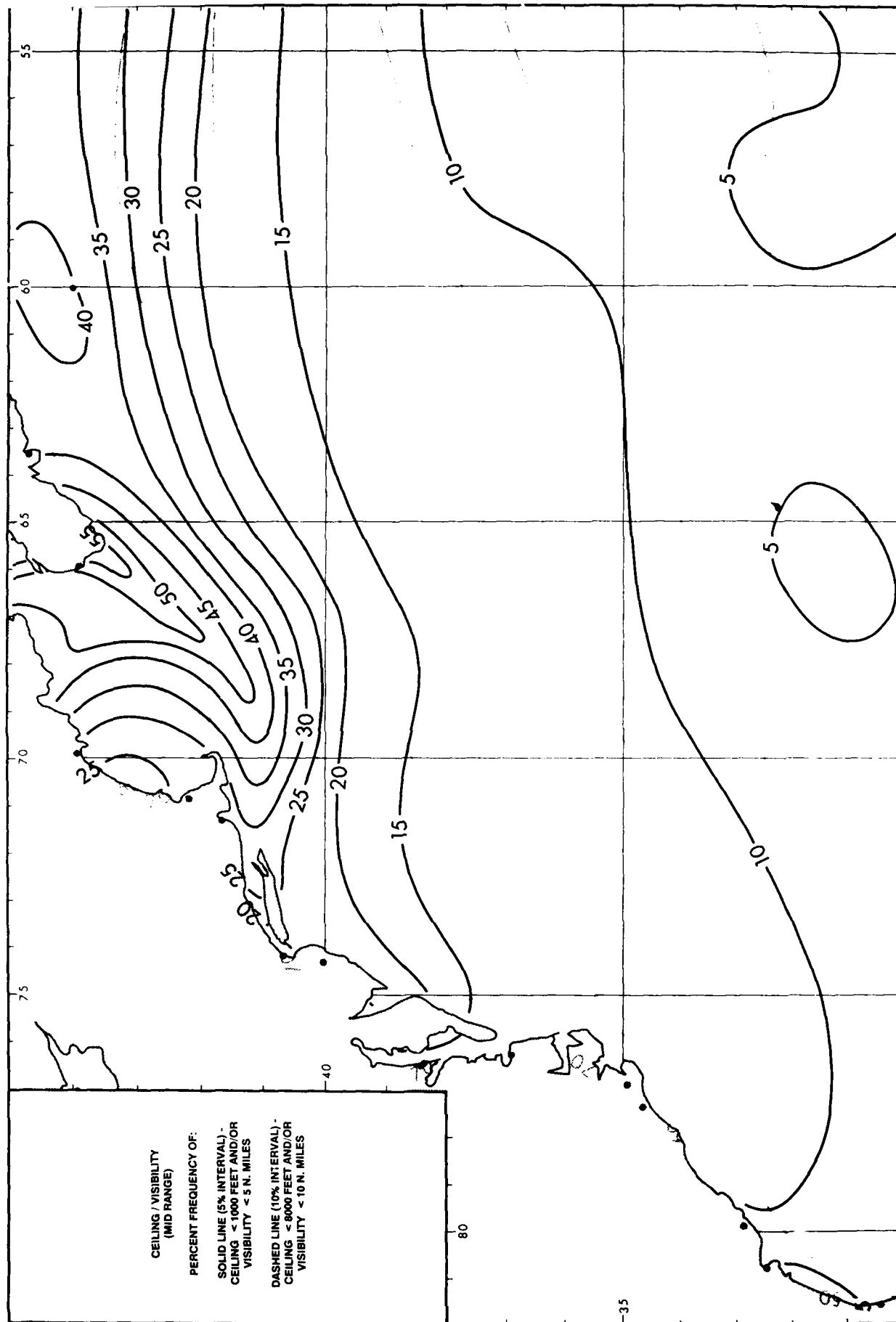
VISIBILITY
PERCENT FREQUENCY OF
VARIOUS RANGES WITHIN
ONE - DEGREE QUADRANGLES.

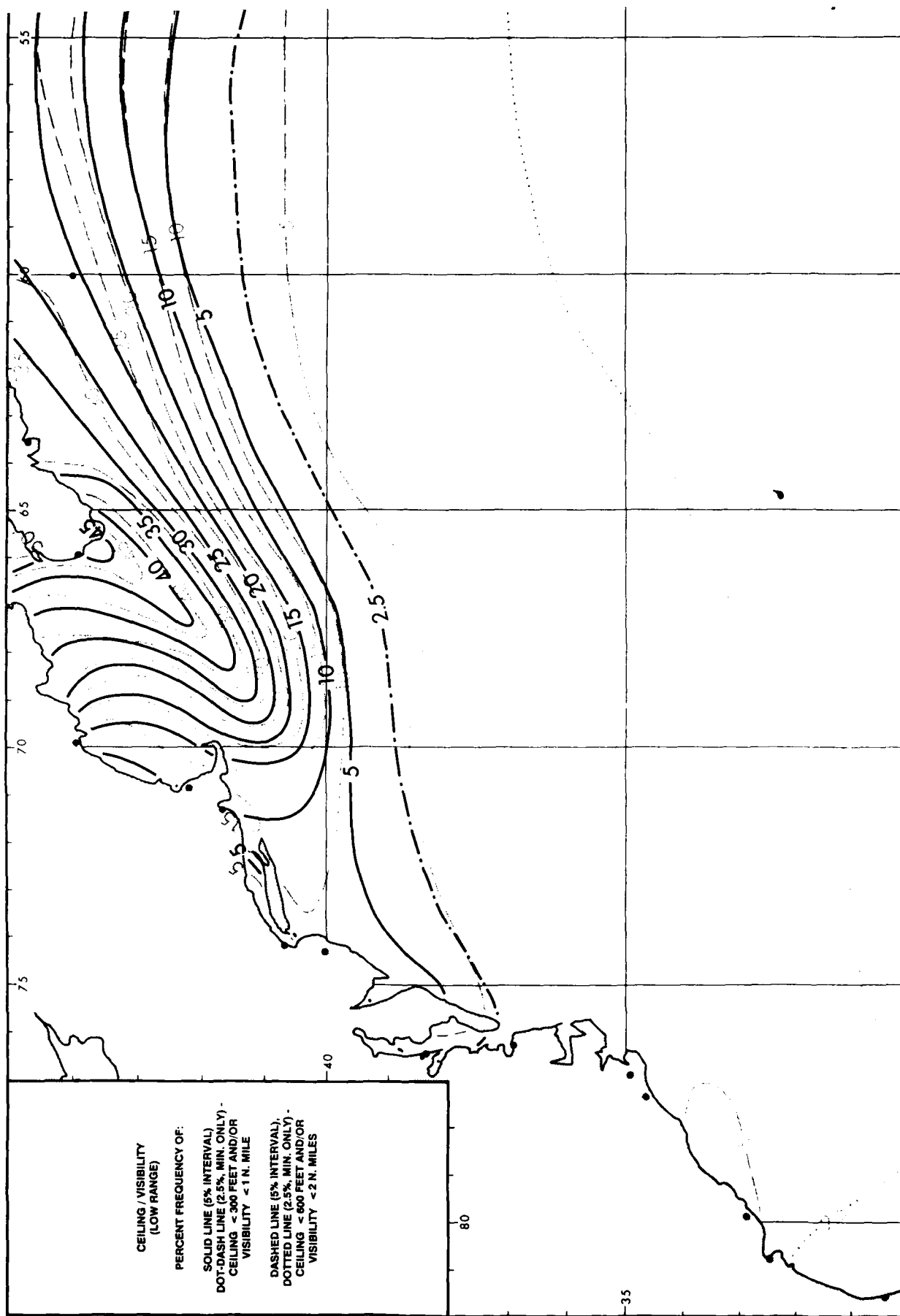
N. MILES	PERCENT
<.5	.2
.5 < 1	3.1
1 < 2	6.7
2 < 5	10.0
5 < 10	60.0
≥ 10	20.0

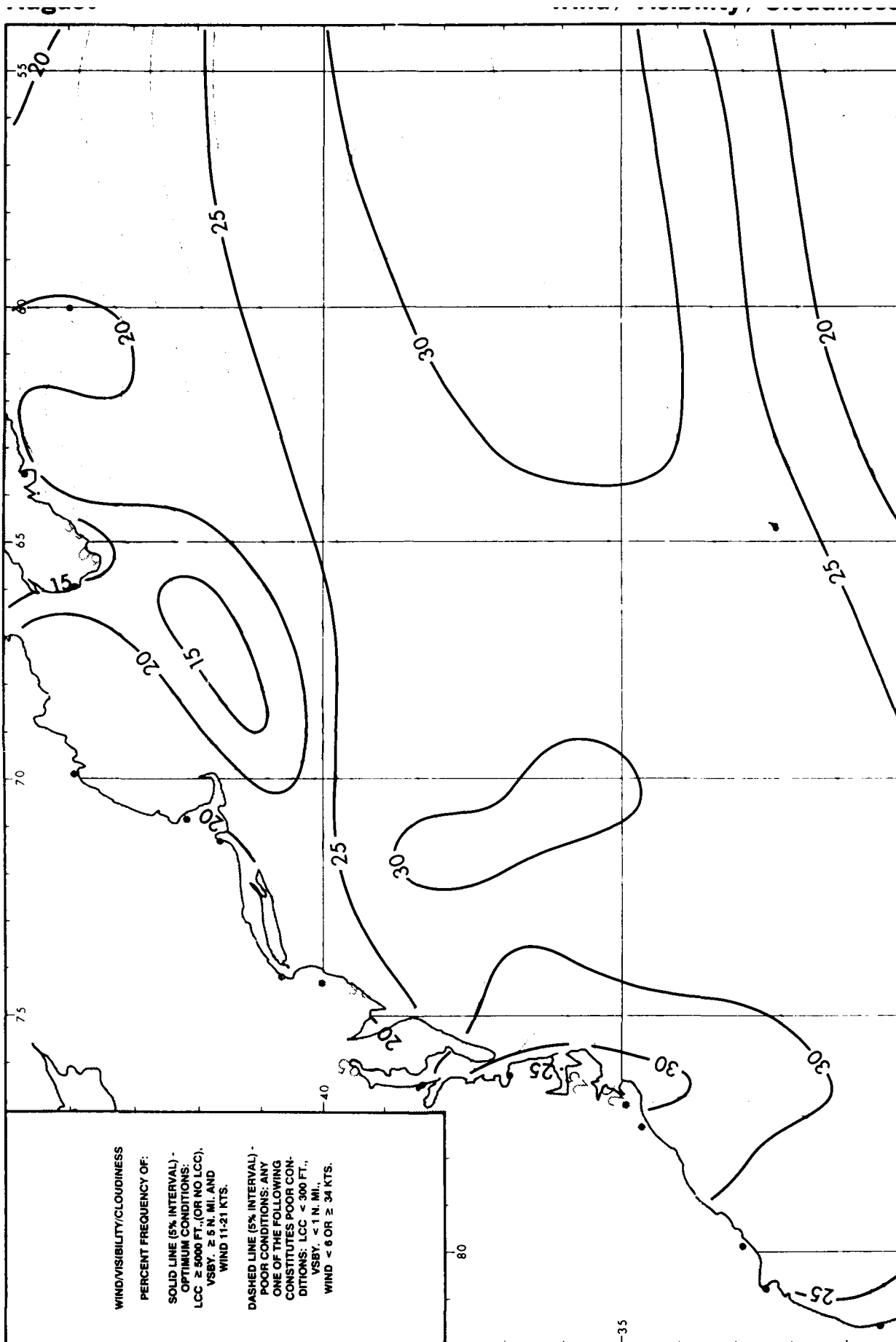
N = 1234
 EXAMPLE: 3.1% OF THE
 OBSERVED VISIBILITIES
 WERE < 1 BUT ≥ 1/2 N. MILE.
 N = OBSERVATION COUNT.



[illegible]

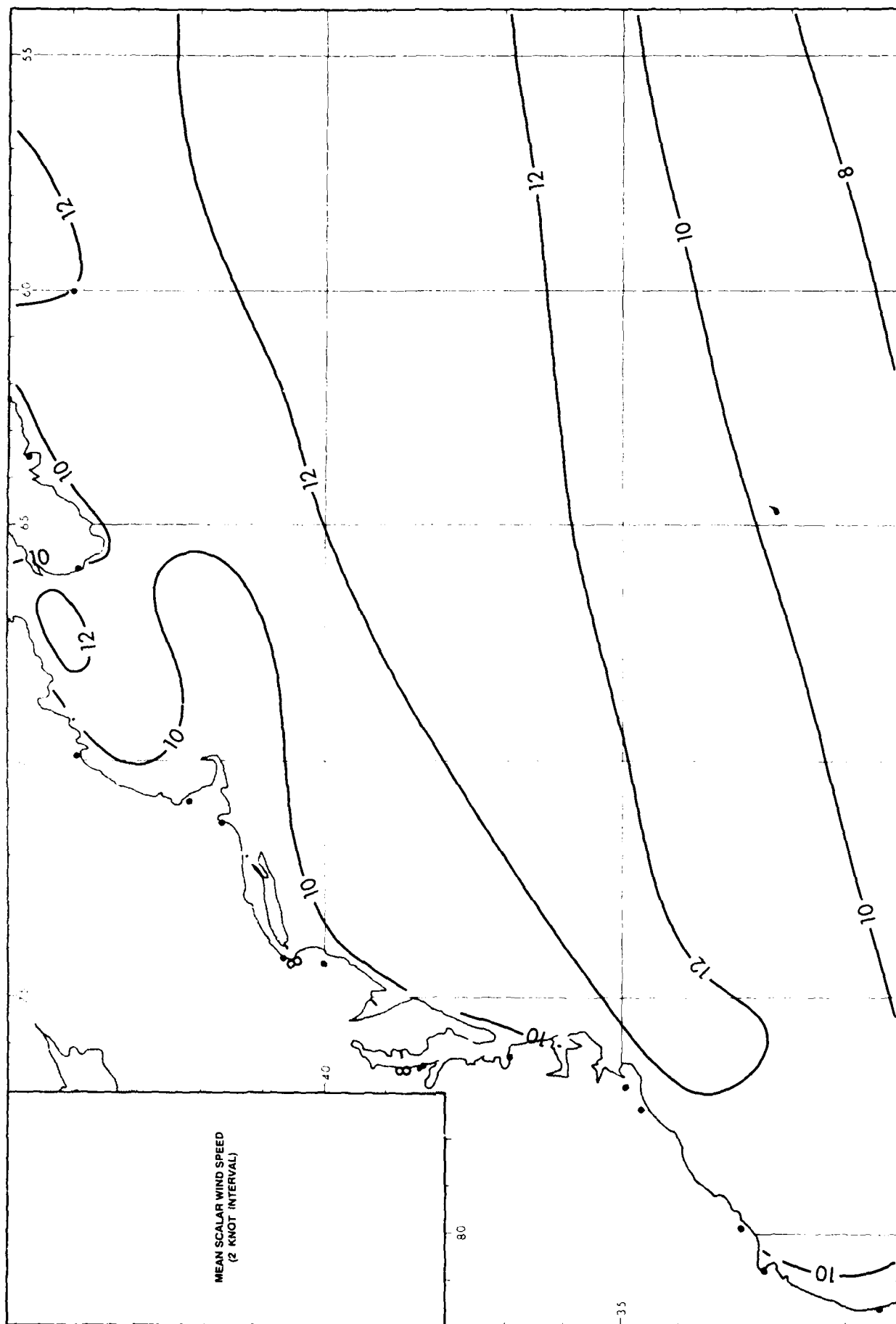






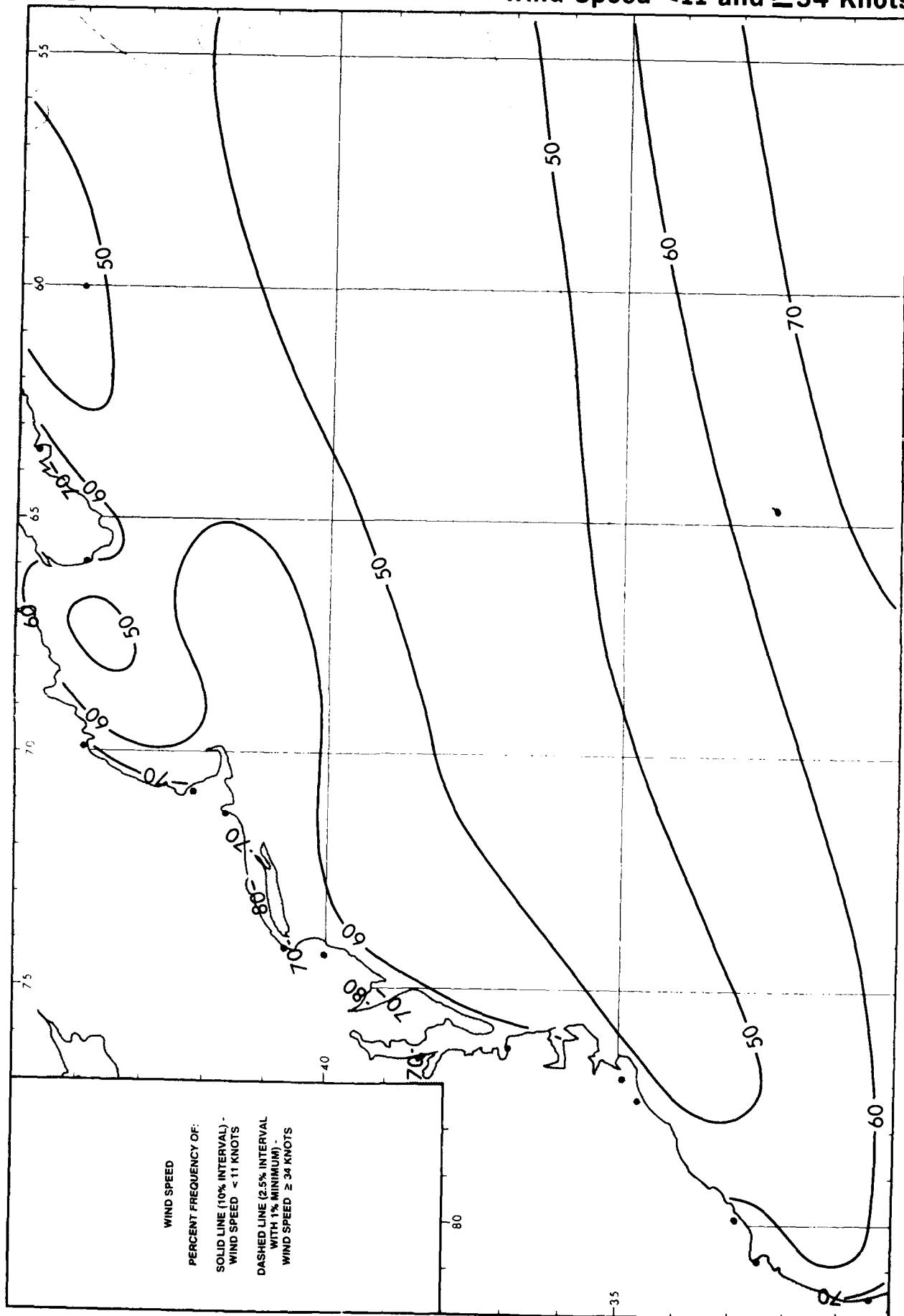
August

Mean Scalar Wind Speed



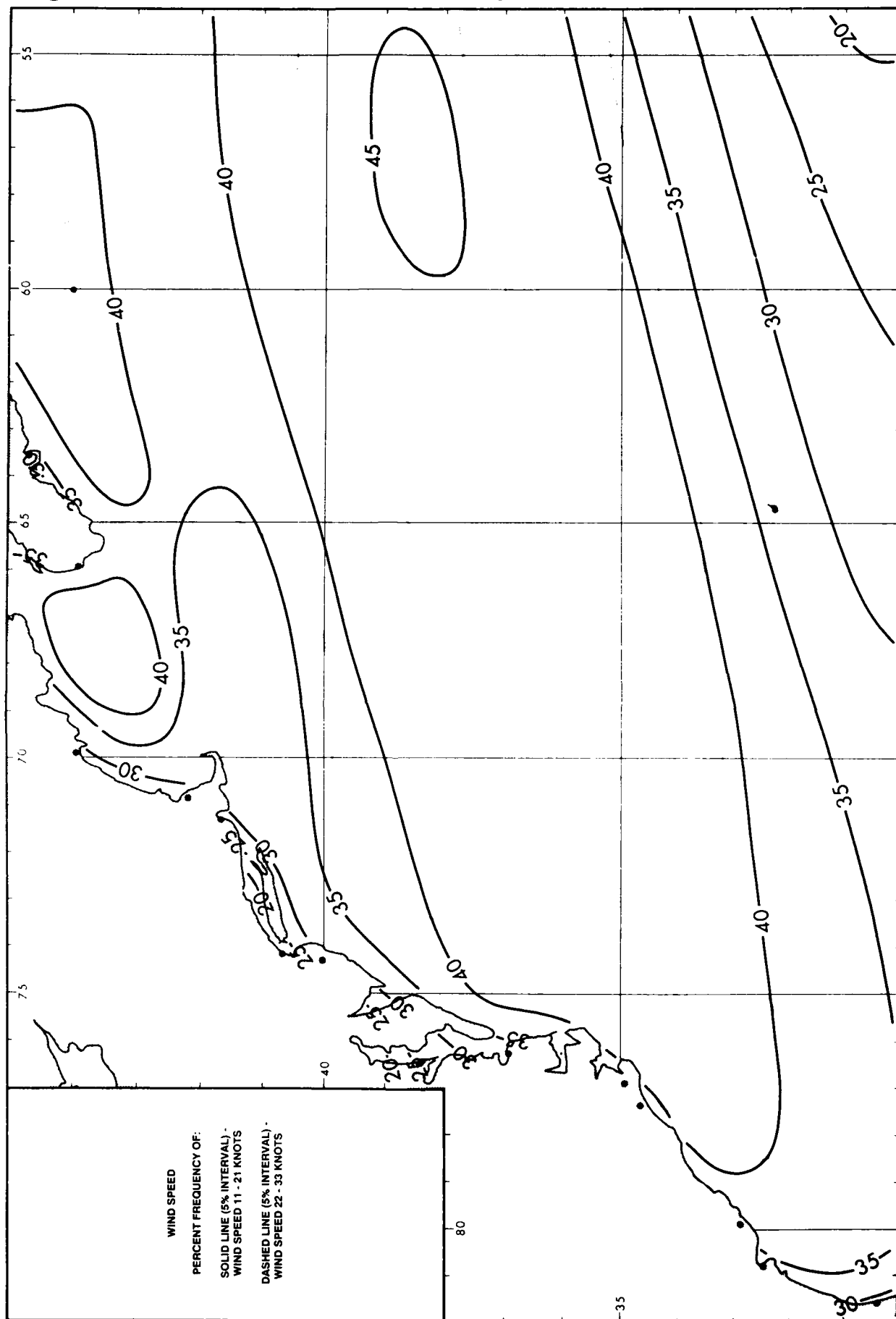
August

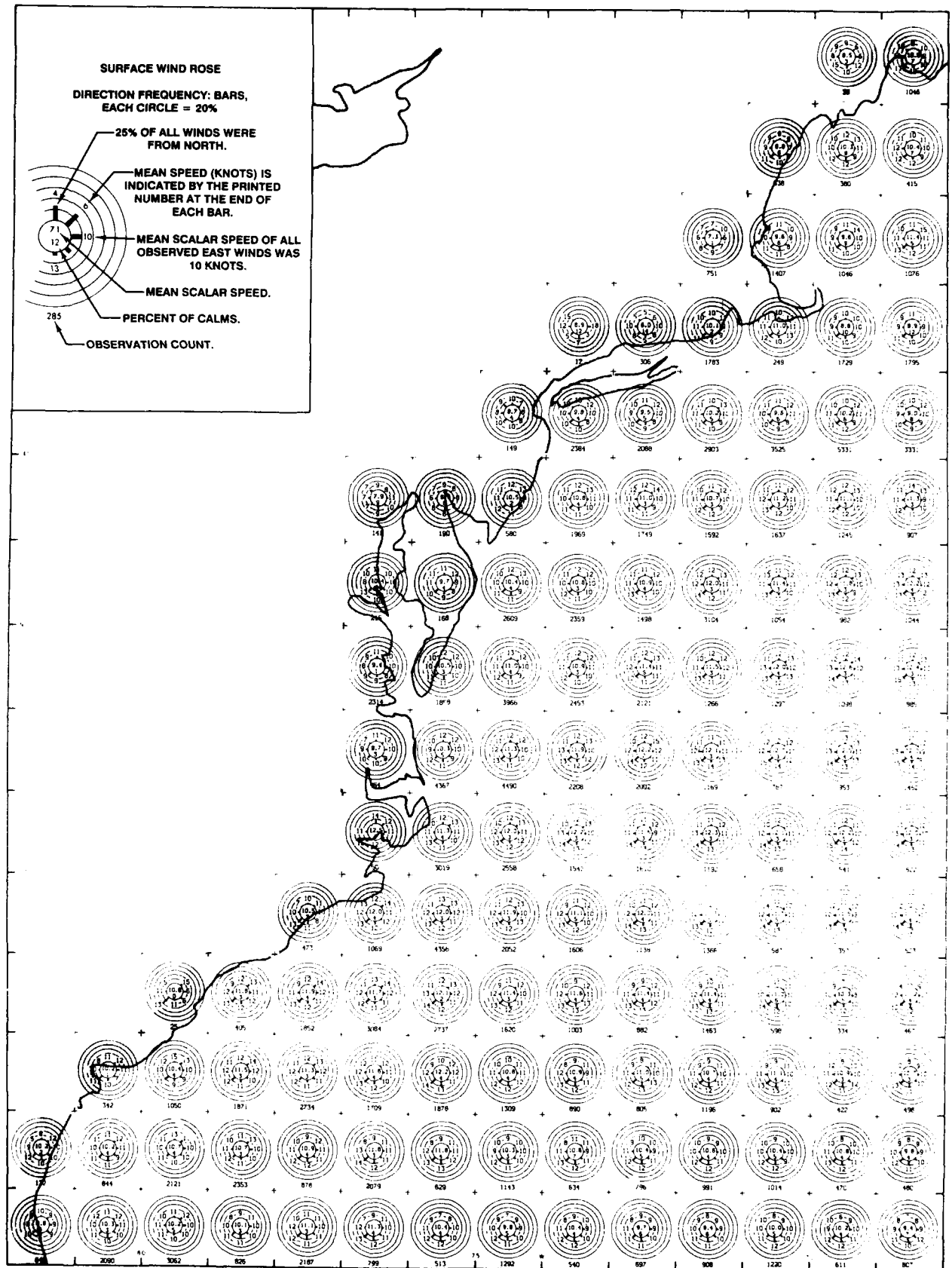
Wind Speed < 11 and ≥ 34 Knots



August

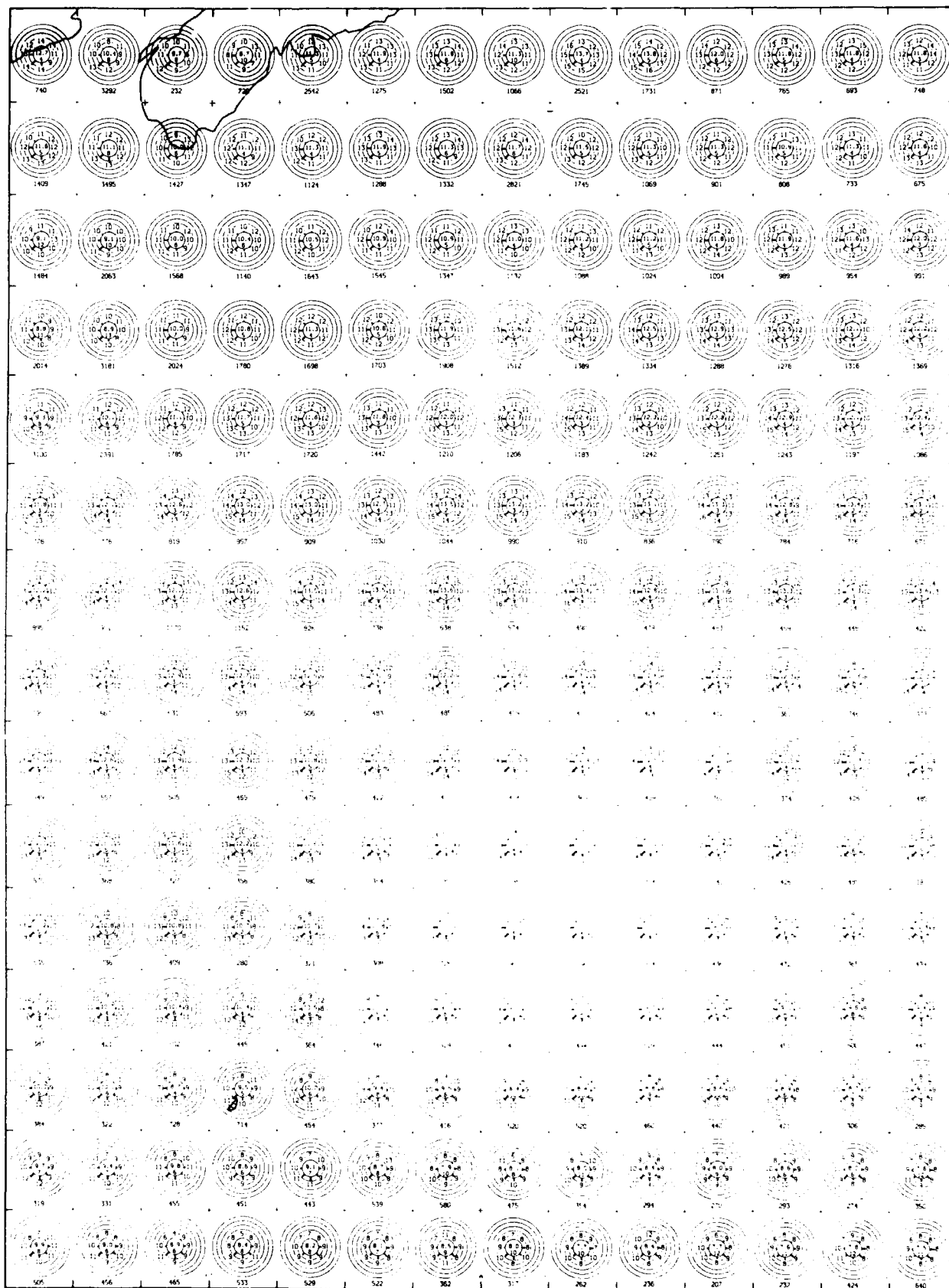
Wind Speed 11 - 21 and 22 - 33 Knots





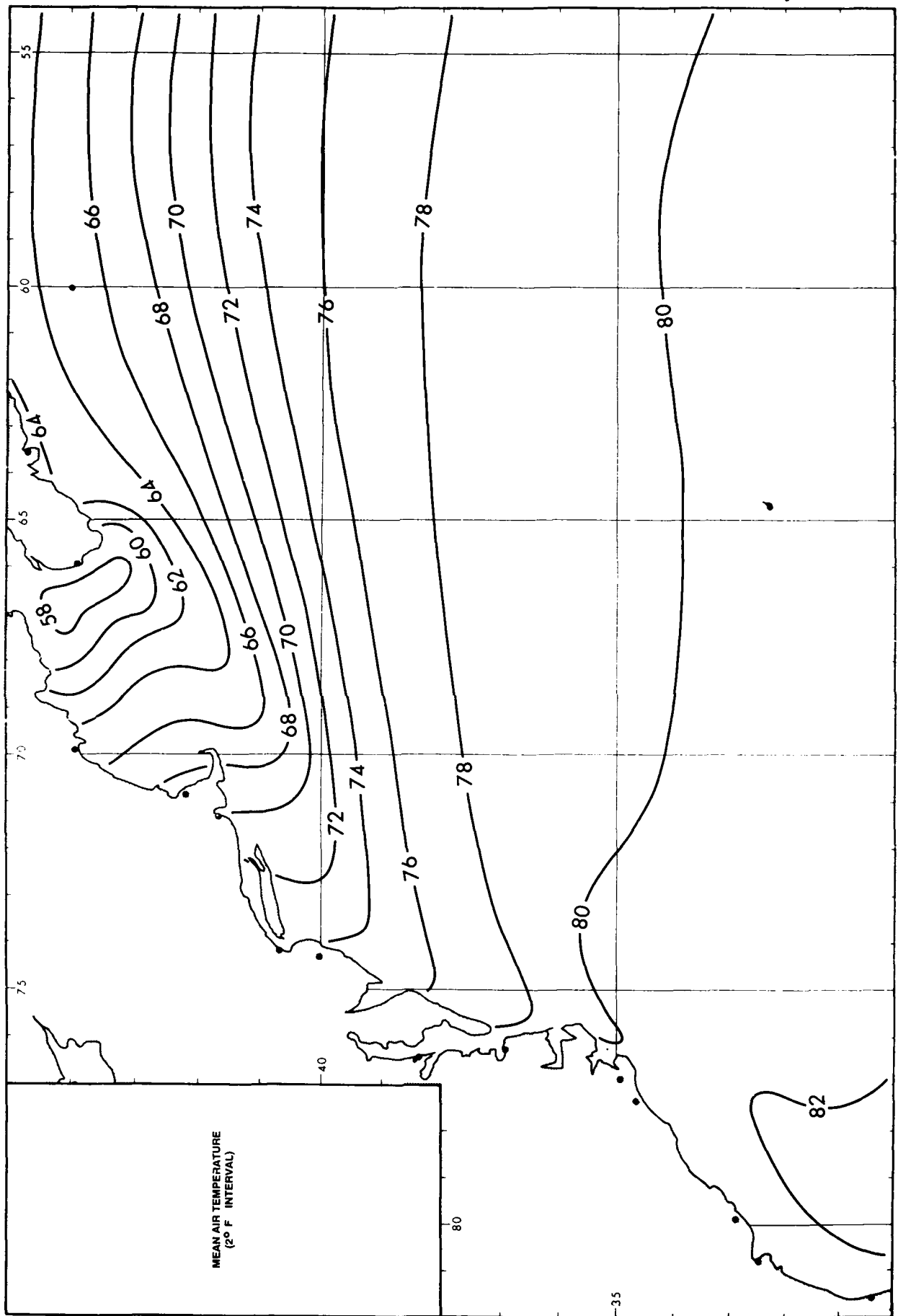
August

Surface Wind Roses



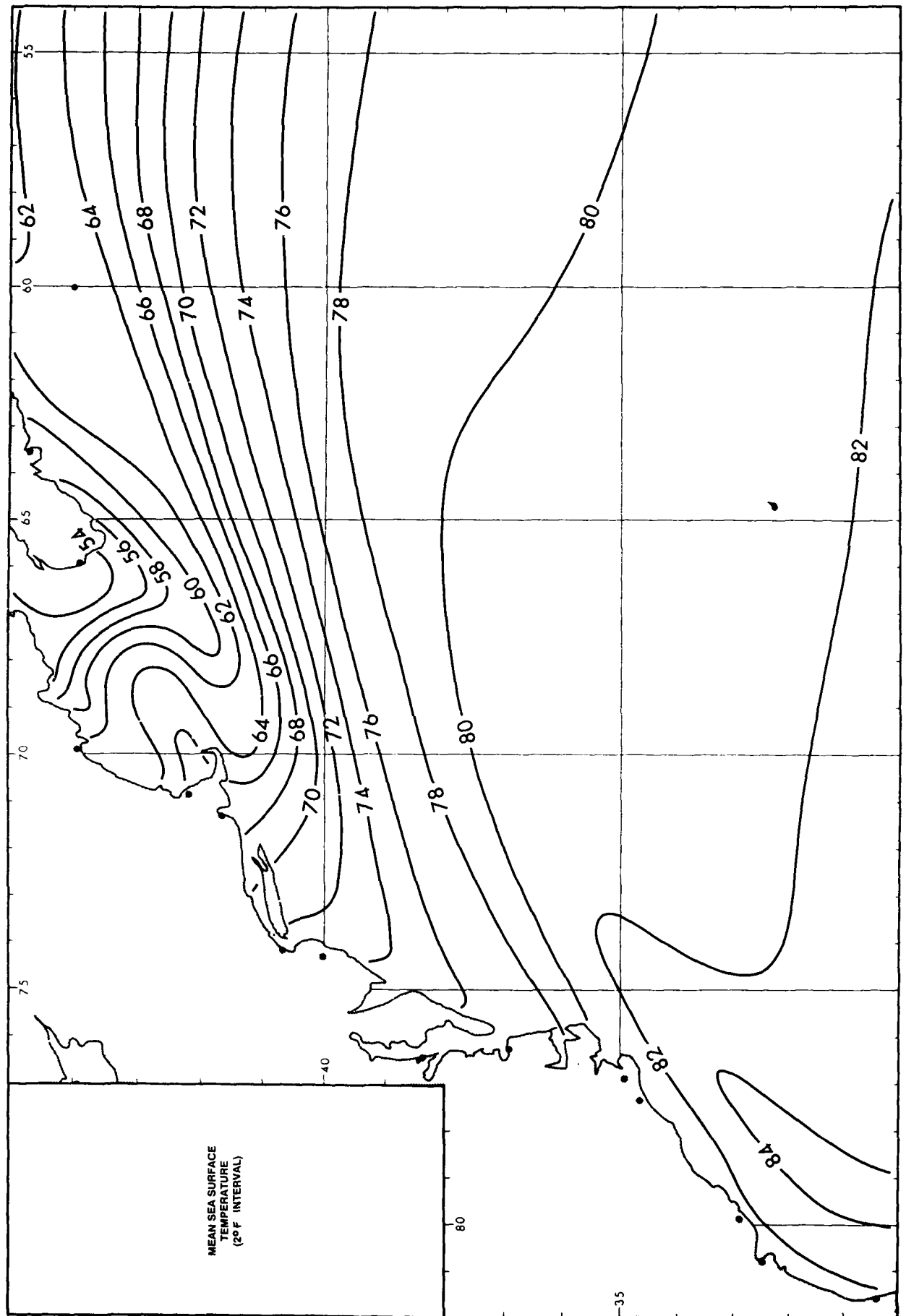
August

Mean Air Temperature



August

Mean Sea Surface Temperature



WAVE HEIGHT - FREQUENCIES

PERCENT FREQUENCY OF VARIOUS
RANGES WITHIN ONE - DEGREE
QUADRANGLES.

Height Percent

≤ 2 10.0

3 - 4 20.0

5 - 6 30.0

7 - 9 20.0

10 - 12 10.0

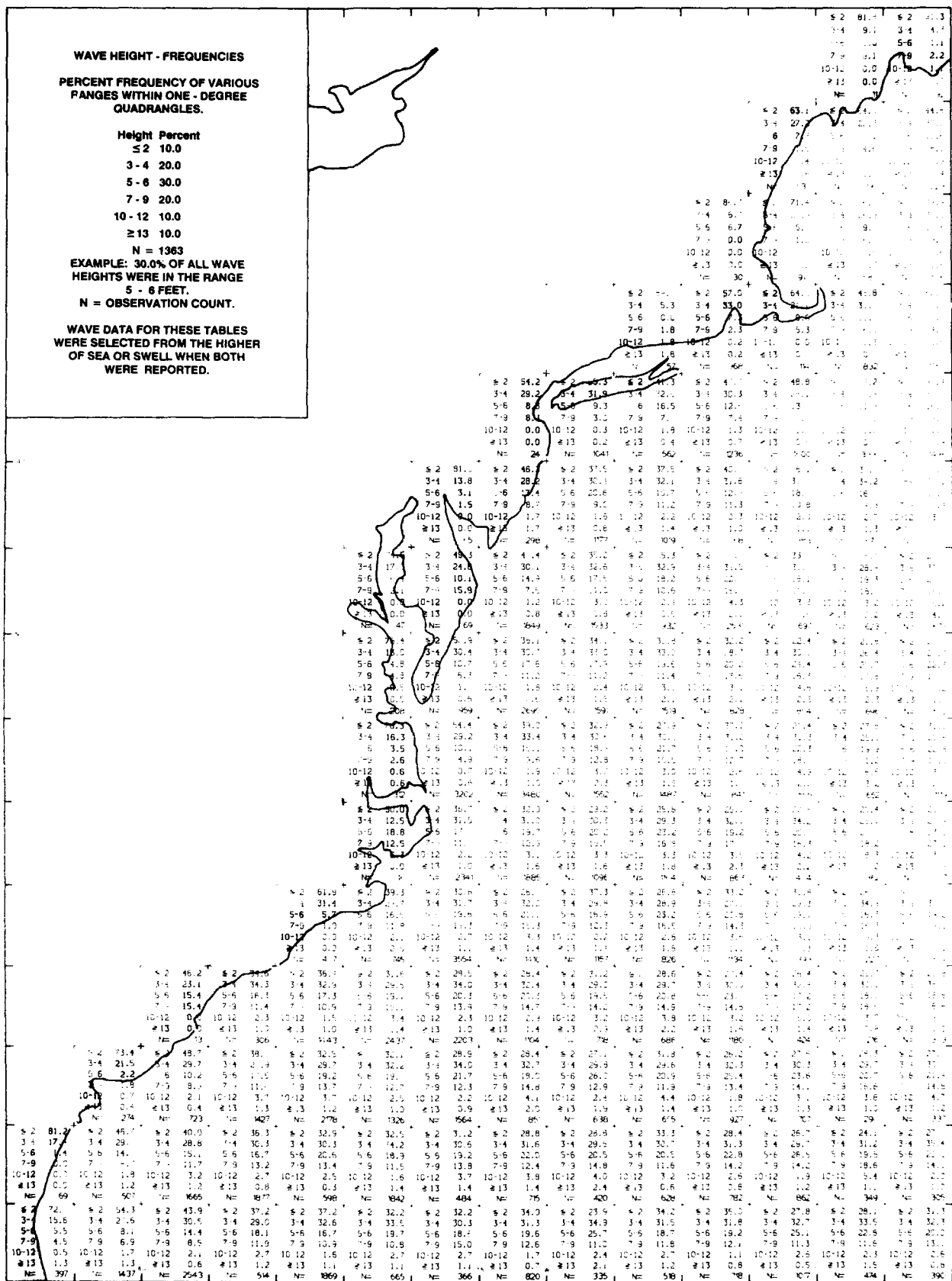
≥ 13 10.0

N = 1363

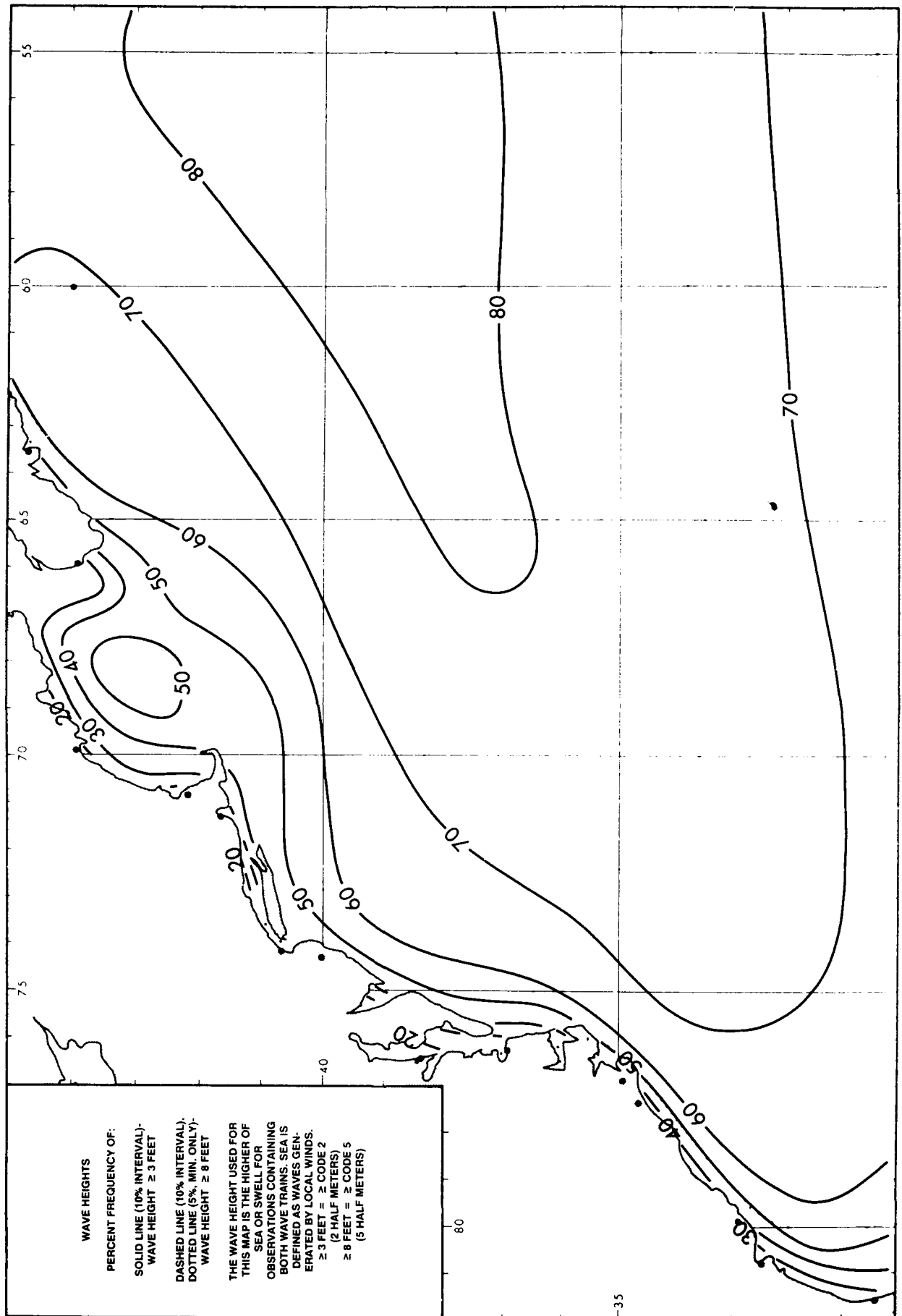
EXAMPLE: 30.0% OF ALL WAVE
HEIGHTS WERE IN THE RANGE
5 - 6 FEET.

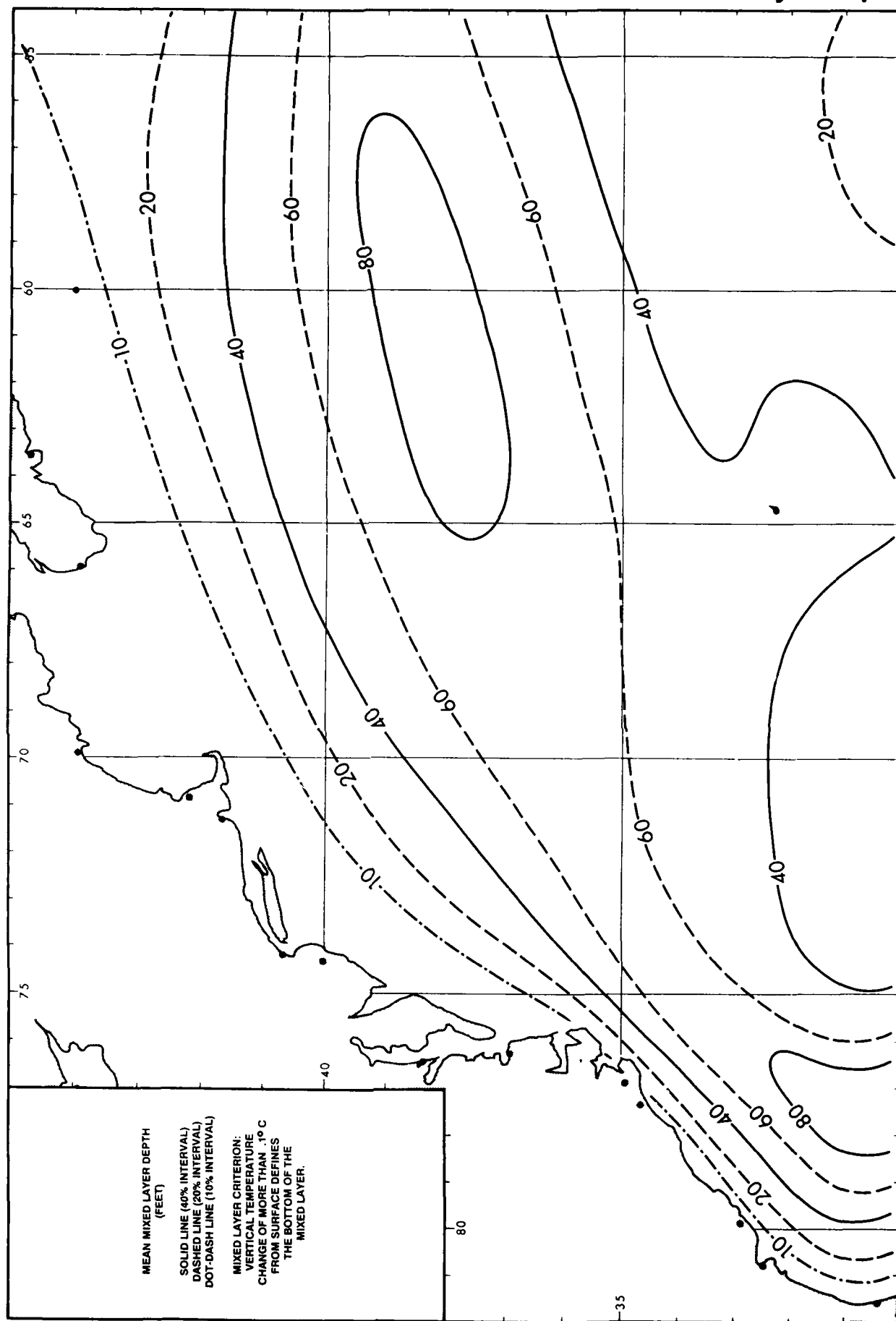
N = OBSERVATION COUNT.

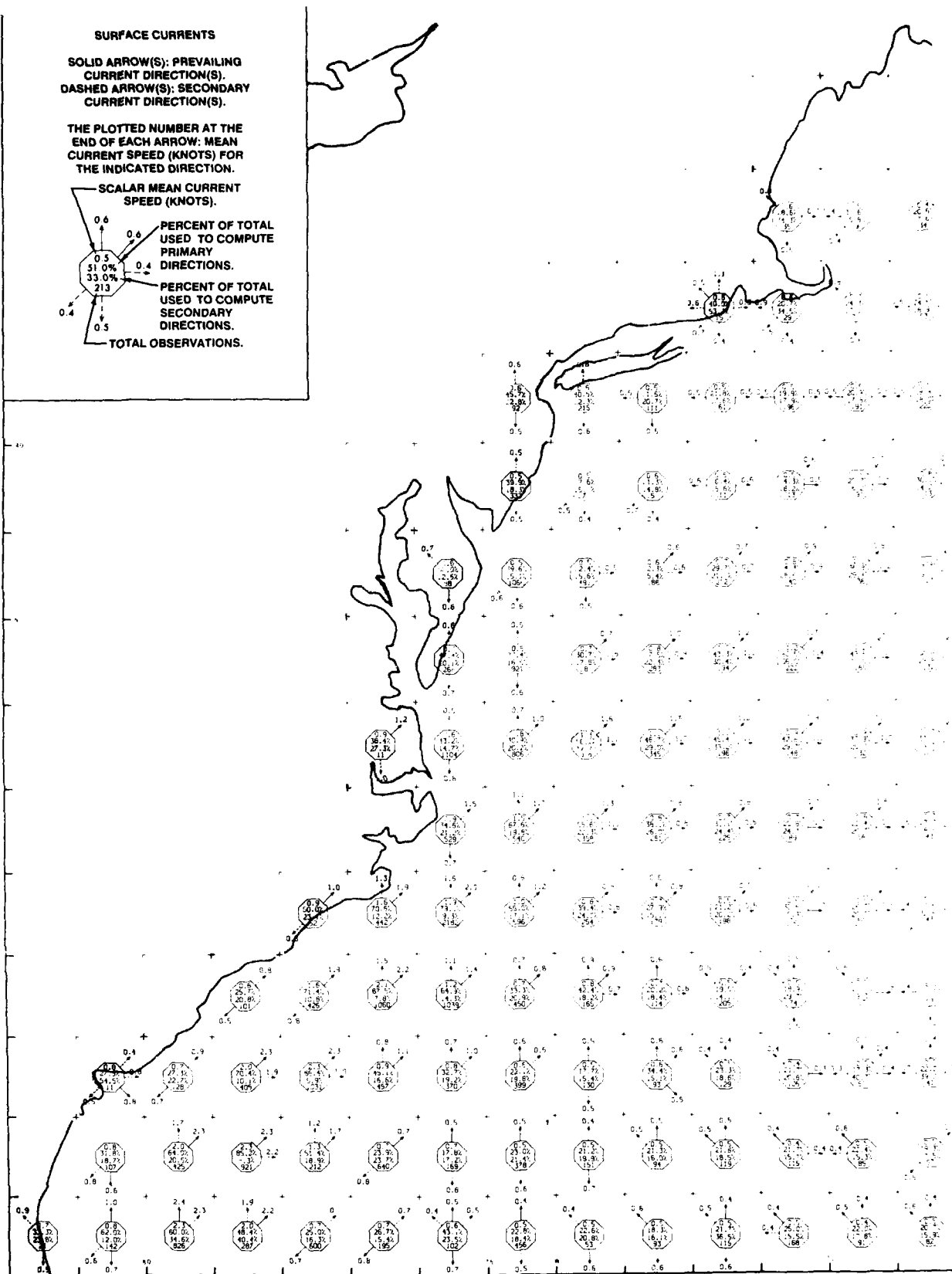
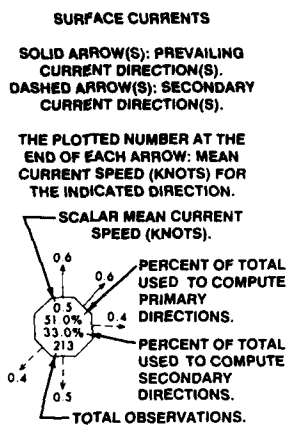
WAVE DATA FOR THESE TABLES
WERE SELECTED FROM THE HIGHER
OF SEA OR SWELL WHEN BOTH
WERE REPORTED.

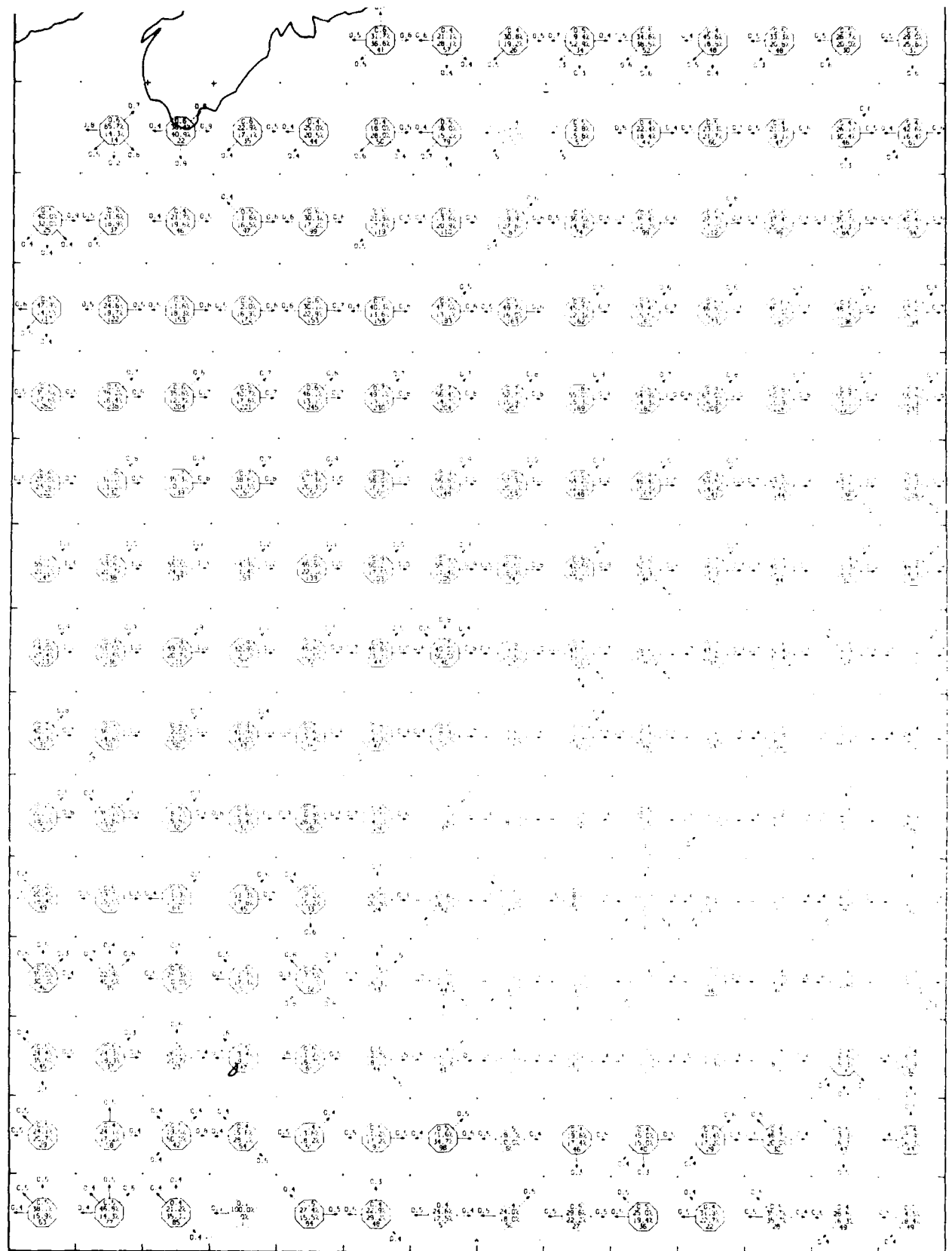


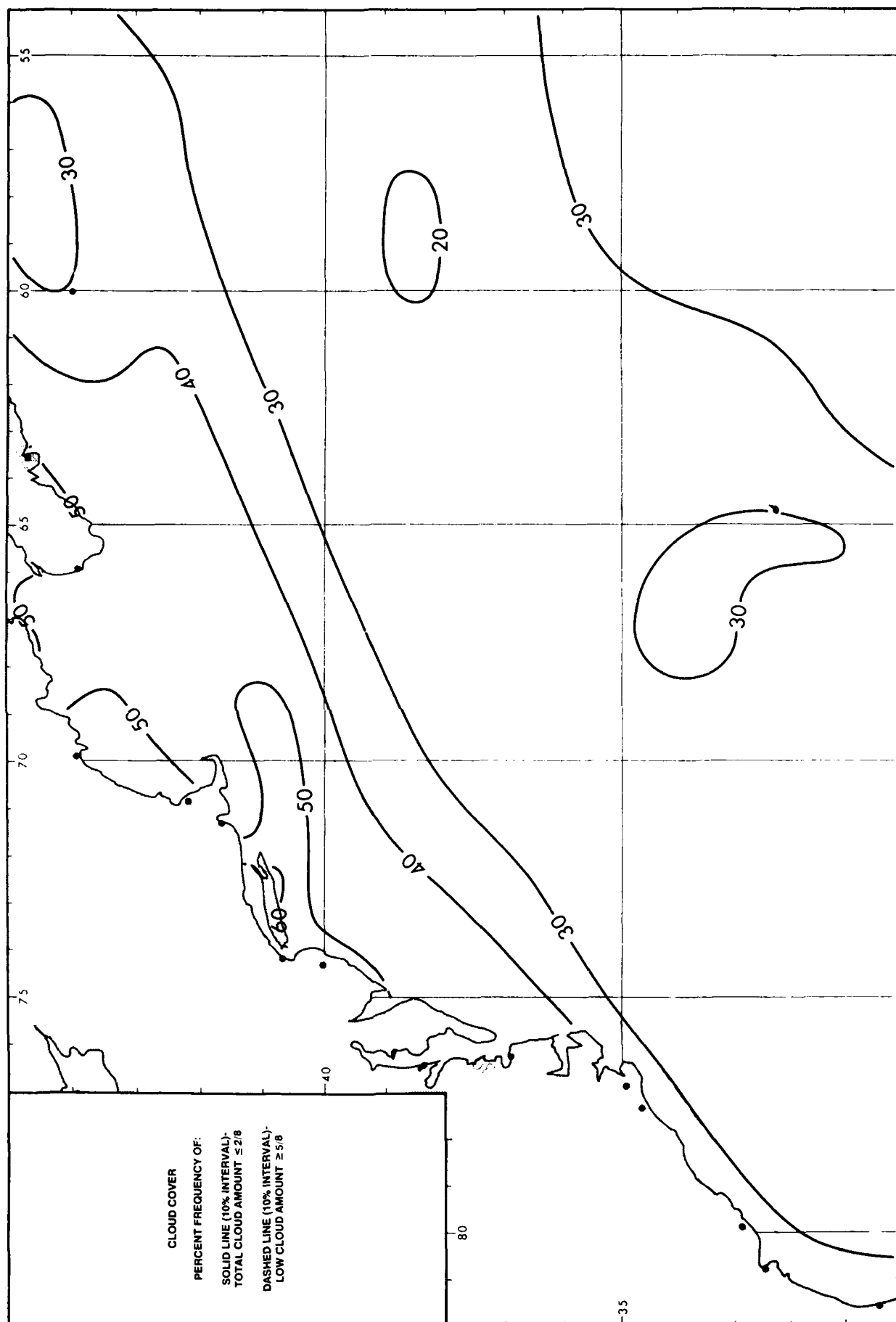
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	8												





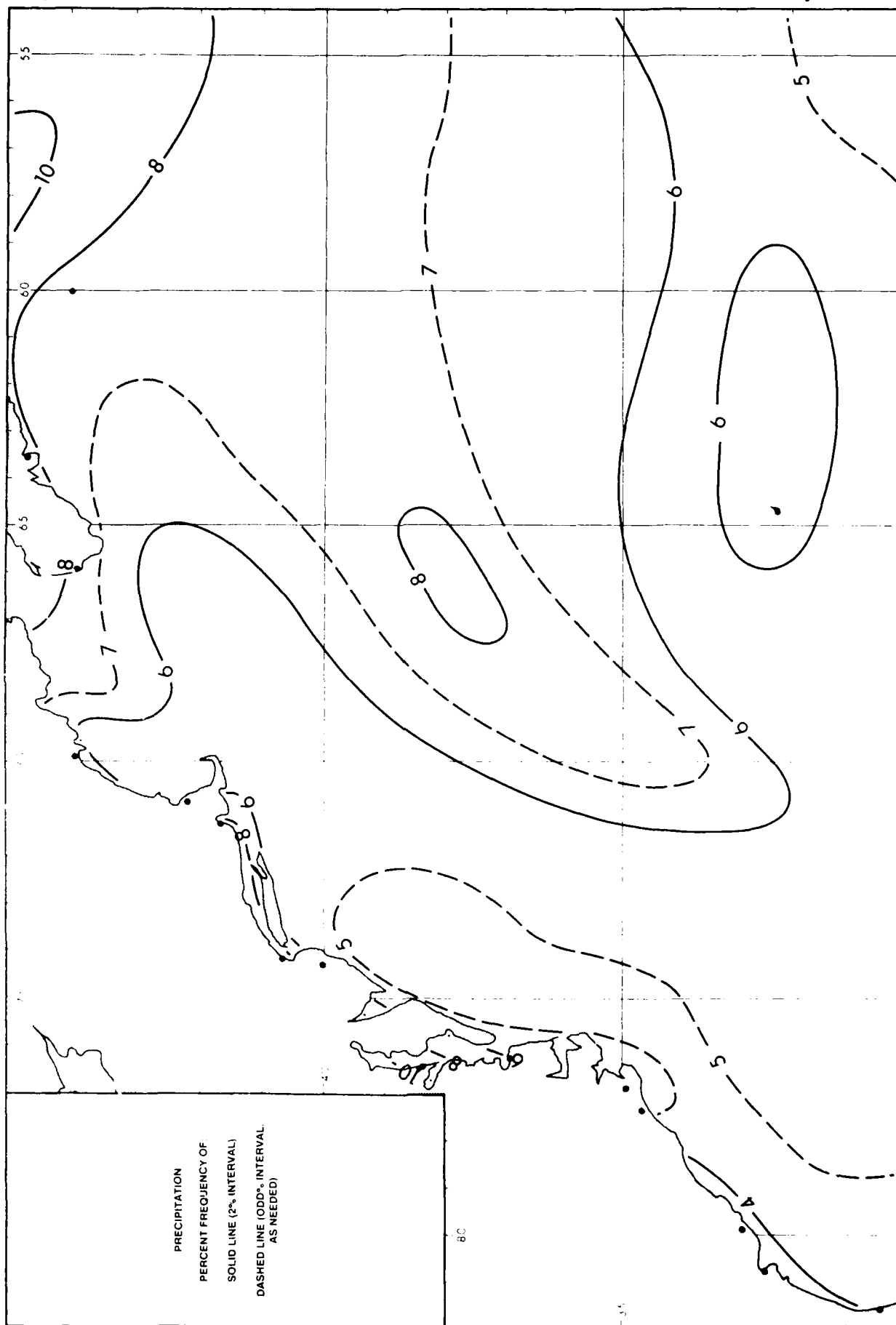






September

Precipitation



September

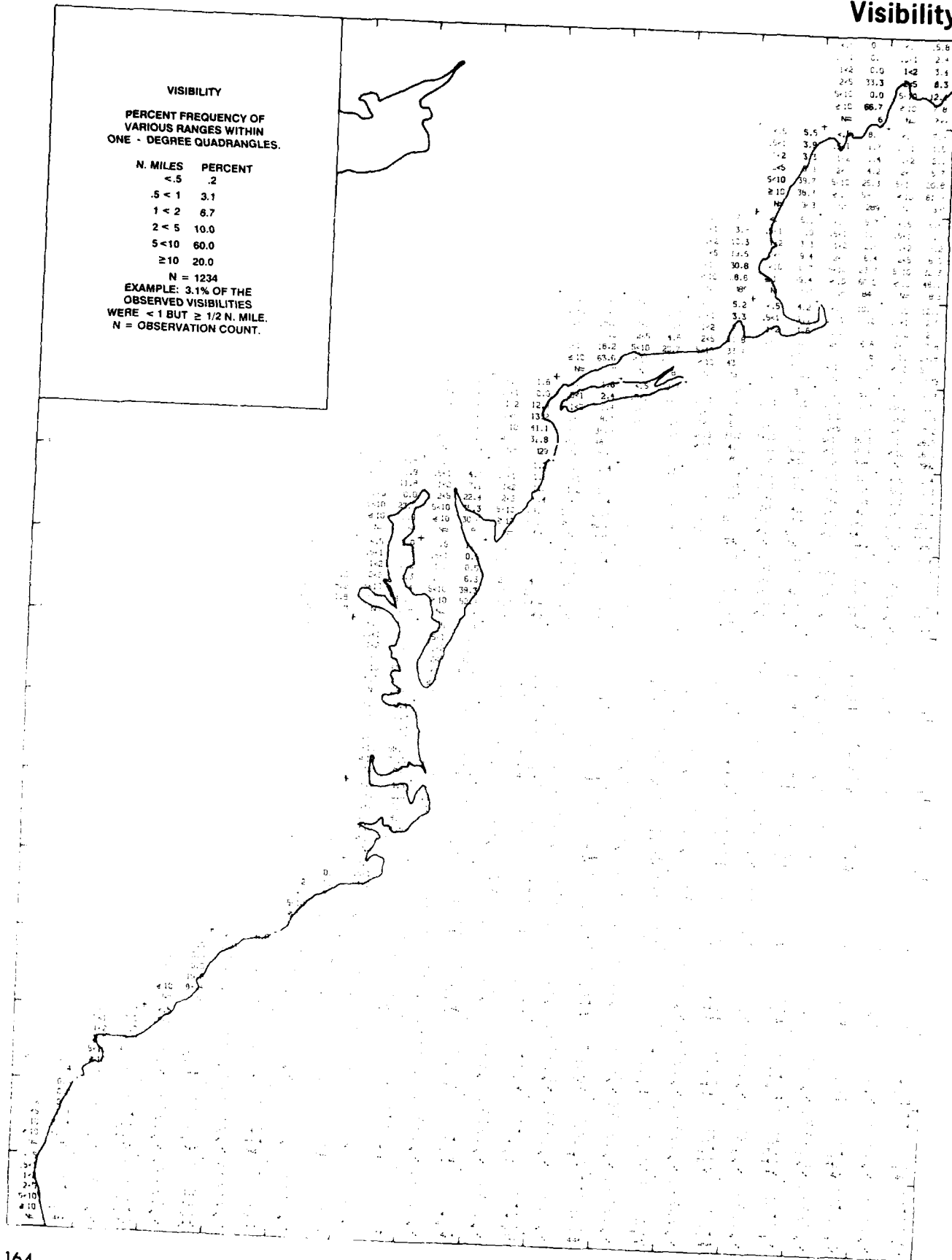
Visibility

VISIBILITY
PERCENT FREQUENCY OF
VARIOUS RANGES WITHIN
ONE - DEGREE QUADRANGLES.

N. MILES	PERCENT
<.5	.2
.5 < 1	3.1
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≥ 10	20.0

N = 1234

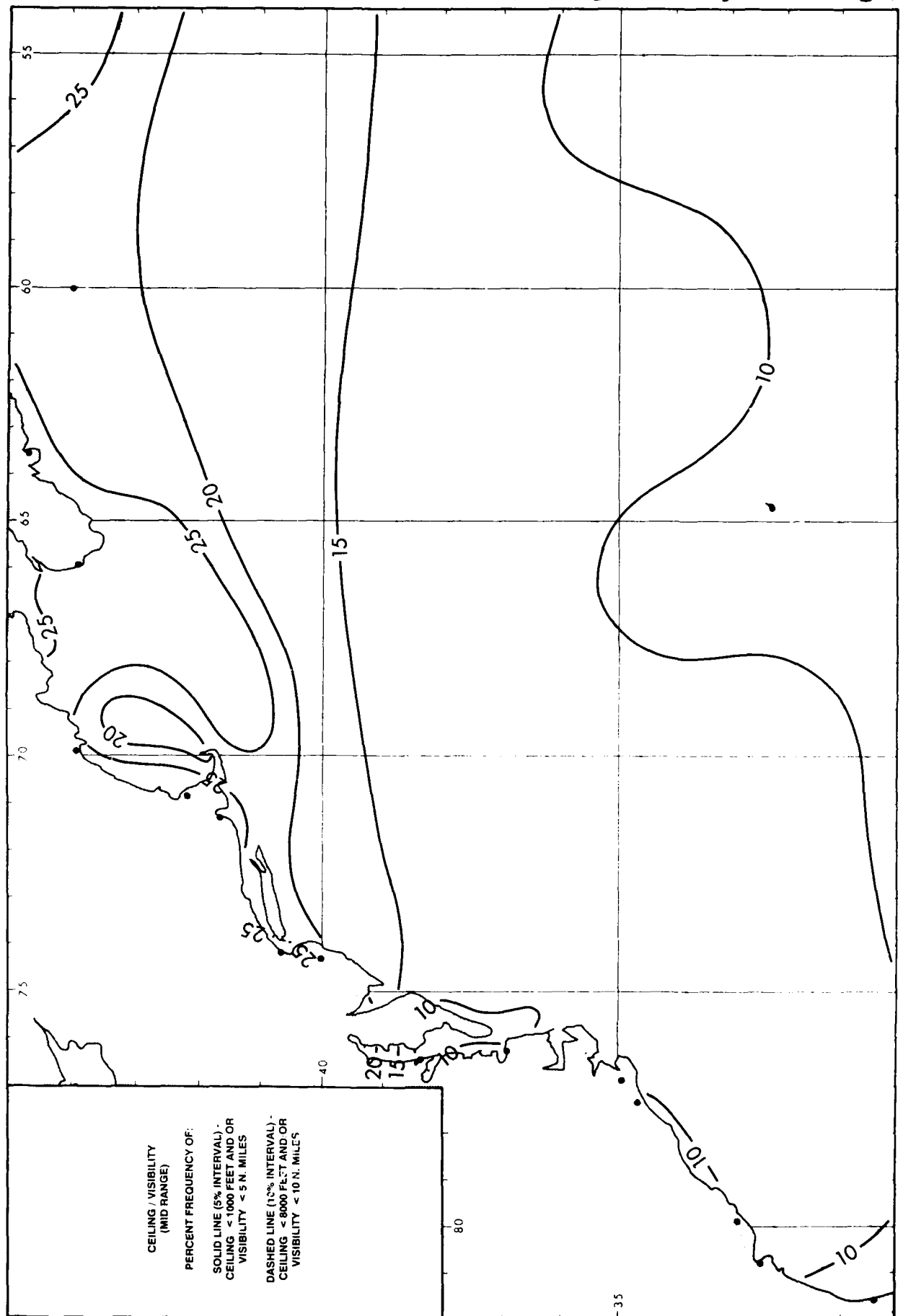
EXAMPLE: 3.1% OF THE
OBSERVED VISIBILITIES
WERE < 1 BUT ≥ 1/2 N. MILE.
N = OBSERVATION COUNT.

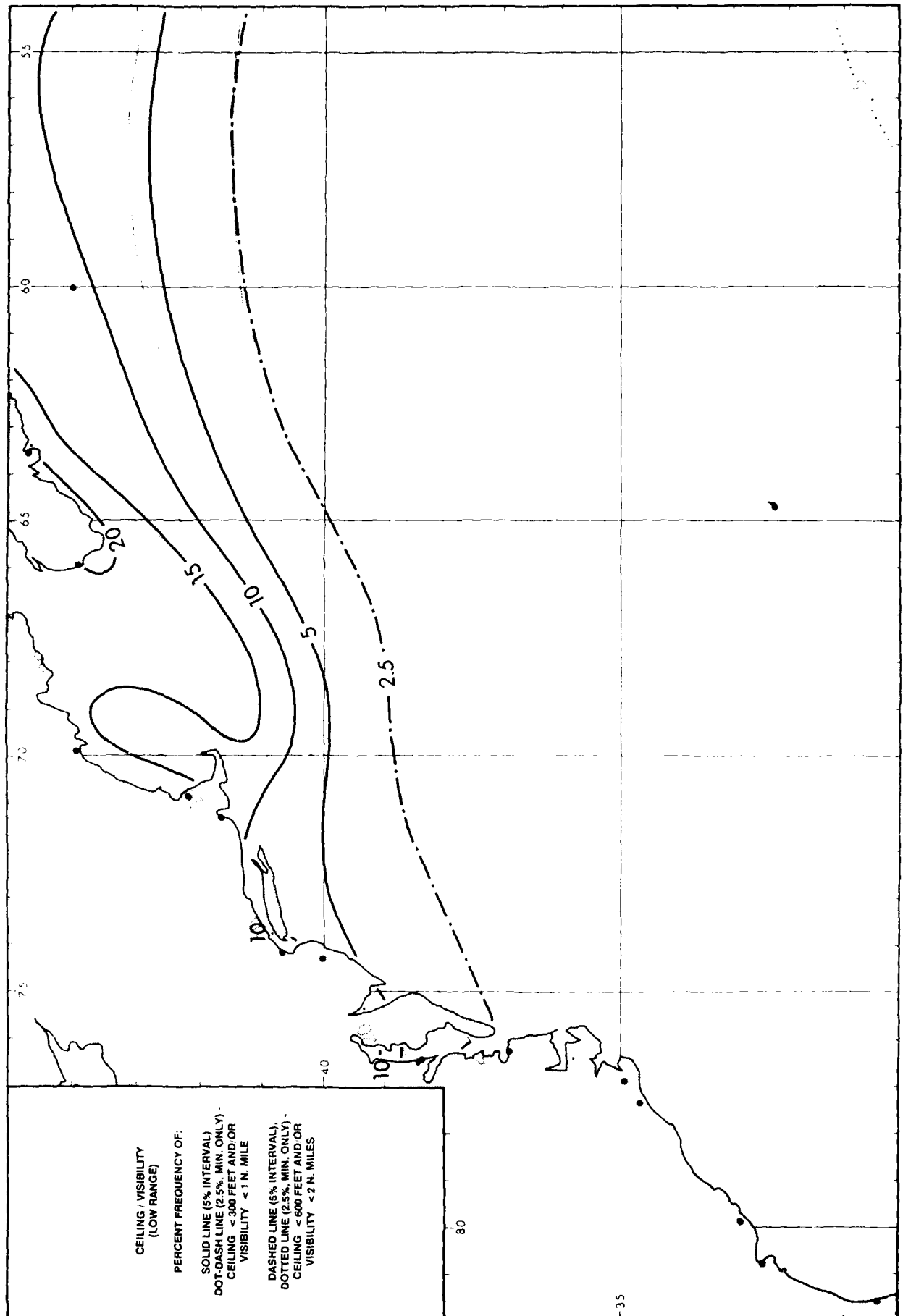


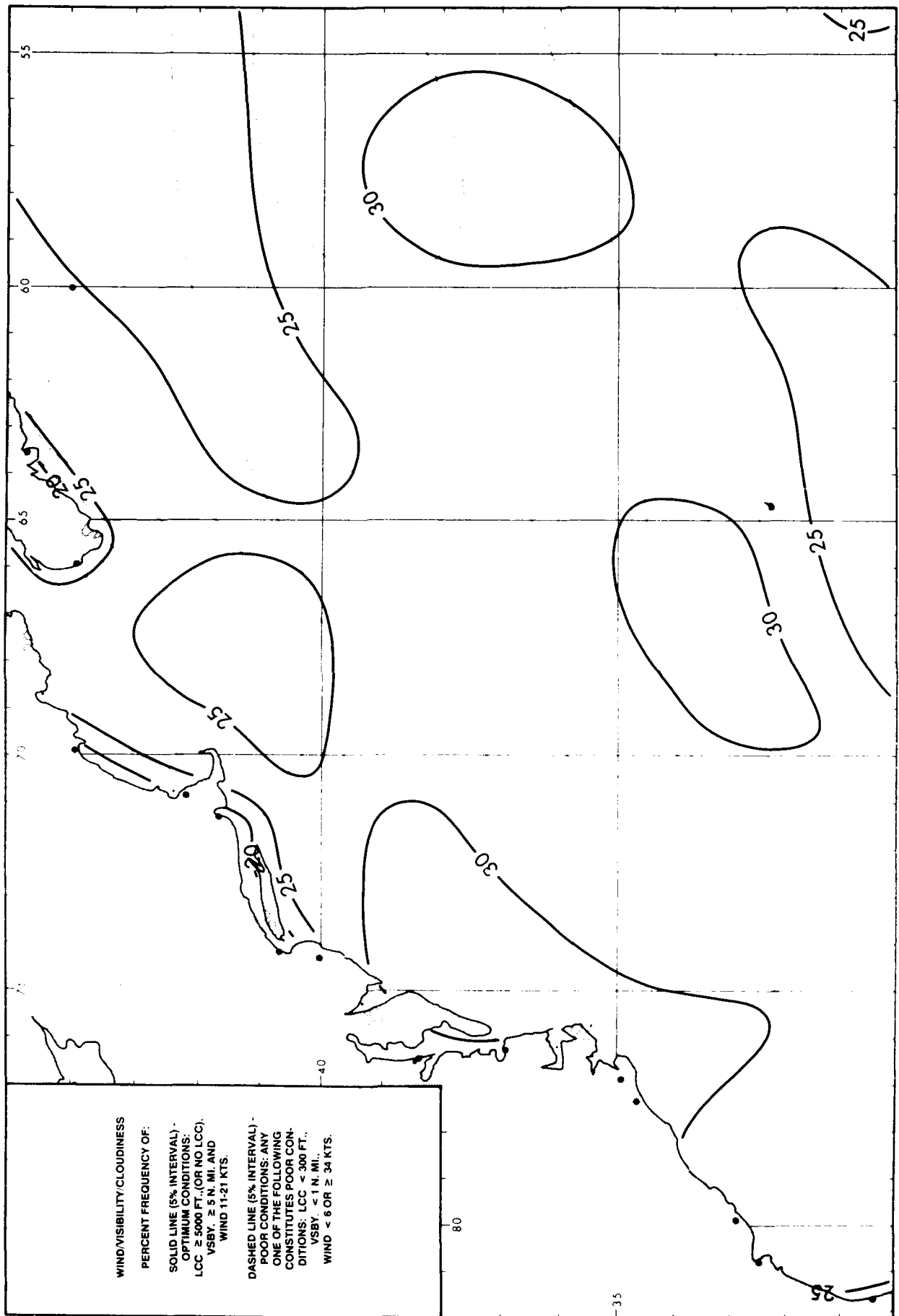
1-5	11.1	4-5	9.8	4-5	7.6	4-5	4.7	4-5	6.5	4-5	1.1	4-5	4.2	4-5	7.5	4-5	6.1	4-5	2.3	4-5	6.1	4-5	4.9	4-5	5.4
5-10	1.9	5-10	1.8	5-10	3.6	5-10	2.4	5-10	1.8	5-10	1.8	5-10	2.1	5-10	2.1	5-10	1.8	5-10	1.7	5-10	1.7	5-10	1.8	5-10	2.4
1-2	1.1	1-2	2.7	1-2	0.7	1-2	3.3	1-2	1.1	1-2	1.1	1-2	1.2	1-2	2.9	1-2	3.7	1-2	1.3	1-2	1.3	1-2	1.8	1-2	1.8
5-10	6.3	5-10	6.9	5-10	7.2	5-10	7.5	5-10	5.2	5-10	5.9	5-10	6.7	5-10	7.2	5-10	10.4	5-10	8.9	5-10	7.4	5-10	6.7	5-10	6.2
10	64.4	10	62.3	10	60.9	10	63.4	10	63.1	10	61.9	10	62.7	10	61.1	10	59.1	10	59.0	10	60.6	10	57.2	10	56.9
N	585	N	307	N	138	N	886	N	246	N	189	N	110	N	8.9	N	246	N	444	N	91	N	496	N	500
1-5	11.5	4-5	14.5	4-5	10.1	4-5	9.6	4-5	7.1	4-5	7.2	4-5	5.2	4-5	5.9	4-5	3.5	4-5	4.5	4-5	1.5	4-5	7.1	4-5	2.6
5-10	2.8	5-10	1.8	5-10	2.5	5-10	2.5	5-10	1.8	5-10	1.0	5-10	1.3	5-10	1.7	5-10	2.2	5-10	1.7	5-10	0.9	5-10	1.9	5-10	0.9
1-2	4.1	1-2	1.9	1-2	2.6	1-2	2.5	1-2	2.8	1-2	2.3	1-2	1.3	1-2	1.7	1-2	1.1	1-2	2.2	1-2	1.7	1-2	2.4	1-2	1.9
5-10	8.7	5-10	6.2	5-10	6.4	5-10	6.1	5-10	5.7	5-10	7.8	5-10	7.4	5-10	6.0	5-10	6.5	5-10	5.2	5-10	2.5	5-10	5.6	5-10	4.7
10	57.3	10	59.2	10	46.0	10	60.2	10	58.6	10	56.2	10	6.5	10	6.1	10	58.2	10	60.5	10	59.9	10	54.7	10	58.4
N	184	N	2257	N	1305	N	1255	N	130	N	1046	N	1003	N	201	N	1948	N	699	N	506	N	462	N	426
1-5	13.4	4-5	13.4	4-5	11.2	4-5	5.3	4-5	3.8	4-5	3.4	4-5	2.7	4-5	1.1	4-5	1.6	4-5	0.7	4-5	1.1	4-5	1.1	4-5	1.1
5-10	1.4	5-10	1.4	5-10	2.3	5-10	2.5	5-10	1.7	5-10	1.4	5-10	1.1	5-10	1.1	5-10	1.5	5-10	0.4	5-10	0.6	5-10	0.6	5-10	0.5
1-2	2.0	1-2	2.6	1-2	3.1	1-2	2.5	1-2	2.1	1-2	1.4	1-2	1.3	1-2	1.1	1-2	0.8	1-2	1.4	1-2	2.1	1-2	1.2	1-2	1.7
5-10	7.5	5-10	9.5	5-10	7.7	5-10	7.5	5-10	7.0	5-10	5.3	5-10	4.6	5-10	4.3	5-10	3.4	5-10	4.5	5-10	3.7	5-10	3.7	5-10	4.4
10	26.1	10	27.4	10	29.8	10	28.1	10	25.6	10	24.4	10	28.0	10	2.3	10	26.7	10	2.3	10	25.2	10	24.9	10	24.7
10	49.7	10	46.7	10	49.8	10	55.5	10	59.8	10	64.1	10	64.6	10	64.6	10	63.9	10	65.3	10	68.4	10	68.1	10	67.1
N	360	N	720	N	1055	N	1080	N	1263	N	1001	N	824	N	653	N	600	N	567	N	643	N	619	N	662
1-5	10.5	4-5	13.0	4-5	4.3	4-5	1.7	4-5	1.6	4-5	0.9	4-5	0.5	4-5	0.3	4-5	1.0	4-5	0.4	4-5	0.5	4-5	0.5	4-5	0.3
5-10	2.0	5-10	1.4	5-10	1.7	5-10	1.0	5-10	0.7	5-10	0.8	5-10	0.2	5-10	1.4	5-10	0.4	5-10	0.1	5-10	0.1	5-10	0.6	5-10	0.6
1-2	1.8	1-2	1.6	1-2	0.9	1-2	1.2	1-2	0.7	1-2	0.8	1-2	0.7	1-2	0.5	1-2	0.5	1-2	0.9	1-2	1.5	1-2	1.4	1-2	1.4
5-10	7.7	5-10	7.0	5-10	5.2	5-10	4.8	5-10	4.1	5-10	3.5	5-10	2.9	5-10	2.4	5-10	4.2	5-10	2.6	5-10	3.4	5-10	2.9	5-10	2.1
10	34.8	10	34.5	10	26.7	10	27.8	10	25.7	10	23.7	10	23.4	10	19.9	10	17.8	10	19.1	10	17.7	10	16.1	10	15.4
10	43.3	10	42.4	10	61.1	10	65.6	10	66.8	10	70.4	10	76.3	10	74.9	10	76.1	10	77.0	10	77.7	10	77.6	10	77.9
N	1882	N	2139	N	1275	N	1113	N	1114	N	1033	N	1043	N	923	N	923	N	897	N	940	N	762	N	744
1-5	4.3	4-5	1.9	4-5	0.4	4-5	0.9	4-5	0.7	4-5	0.4	4-5	0.4	4-5	0.4	4-5	0.1	4-5	0.3	4-5	0.1	4-5	0.4	4-5	0.4
5-10	1.4	5-10	0.9	5-10	0.4	5-10	0.3	5-10	0.4	5-10	0.4	5-10	0.1	5-10	0.1	5-10	0.1	5-10	0.1	5-10	0.1	5-10	0.1	5-10	0.1
1-2	1.9	1-2	1.4	1-2	0.7	1-2	1.0	1-2	0.7	1-2	0.6	1-2	0.5	1-2	0.9	1-2	0.7	1-2	0.7	1-2	0.4	1-2	0.3	1-2	0.4
5-10	6.2	5-10	5.6	5-10	4.3	5-10	3.6	5-10	3.6	5-10	4.4	5-10	4.1	5-10	2.6	5-10	3.1	5-10	3.3	5-10	4.7	5-10	4.2	5-10	4.0
10	28.9	10	27.3	10	24.9	10	21.7	10	23.4	10	17.9	10	16.8	10	14.2	10	14.4	10	14.0	10	14.4	10	14.1	10	13.7
10	57.4	10	63.2	10	69.2	10	73.5	10	71.3	10	76.3	10	74.9	10	74.5	10	76.4	10	76.0	10	76.1	10	76.2	10	76.1
N	2847	N	1287	N	150	N	997	N	1051	N	889	N	764	N	694	N	721	N	732	N	694	N	744	N	567
1-5	0.4	4-5	0.3	4-5	0.3	4-5	0.1	4-5	0.1	4-5	0.1	4-5	0.1	4-5	0.1	4-5	0.1	4-5	0.1	4-5	0.1	4-5	0.1	4-5	0.1
5-10	1.2	5-10	0.4	5-10	0.1	5-10	0.1	5-10	0.1	5-10	0.1	5-10	0.1	5-10	0.1	5-10	0.1	5-10	0.1	5-10	0.1	5-10	0.1	5-10	0.1
1-2	0.7	1-2	0.7	1-2	0.2	1-2	0.5	1-2	0.7	1-2	0.3	1-2	0.7	1-2	0.3	1-2	0.3	1-2	0.3	1-2	0.3	1-2	0.3	1-2	0.3
5-10	6.7	5-10	3.4	5-10	5.3	5-10	3.9	5-10	4.1	5-10	3.9	5-10	2.9	5-10	2.9	5-10	2.7	5-10	2.9	5-10	2.9	5-10	2.7	5-10	2.7
10	17.8	10	37.5	10	20.2	10	16.6	10	24.2	10	19.2	10	19.2	10	19.1	10	19.1	10	19.1	10	19.1	10	19.1	10	19.1
10	66.3	10	67.8	10	74.0	10	71.7	10	71.2	10	77.7	10	77.7	10	77.7	10	77.7	10	77.7	10	77.7	10	77.7	10	77.7
N	565	N	673	N	604	N	71	N	676	N	704	N	704	N	704	N	636	N	636	N	636	N	636	N	636
1-5	0.4	4-5	0.2	4-5	0.1	4-5	0.1	4-5	0.1	4-5	0.1	4-5	0.1	4-5	0.1	4-5	0.1	4-5	0.1	4-5	0.1	4-5	0.1	4-5	0.1
5-10	0.4	5-10	0.3	5-10	0.4	5-10	0.1	5-10	0.1	5-10	0.1	5-10	0.1	5-10	0.1	5-10	0.1	5-10	0.1	5-10	0.1	5-10	0.1	5-10	0.1
1-2	0.7	1-2	0.6	1-2	0.4	1-2	0.5	1-2	0.4	1-2	0.4	1-2	0.2	1-2	0.2	1-2	0.2	1-2	0.2	1-2	0.2	1-2	0.2	1-2	0.2
5-10	3.8	5-10	4.4	5-10	2.7	5-10	1.8	5-10	3.1	5-10	2.9	5-10	1.5	5-10	1.5	5-10	2.9	5-10	2.9	5-10	2.9	5-10	2.9	5-10	2.9
10	18.1	10	23.0	10	17.1	10	16.3	10	20.1	10	16.3	10	16.3	10	16.3	10	16.3	10	16.3	10	16.3	10	16.3	10	16.3
10	57.9	10	67.1	10	69.3	10	71.2	10	73.5	10	77.7	10	77.7	10	77.7	10	77.7	10	77.7	10	77.7	10	77.7	10	77.7
N	141	N	649	N	660	N	660	N	640	N	440	N	440	N	440	N	440	N	440	N	440	N	440	N	440

September

Ceiling / Visibility (Mid Range)

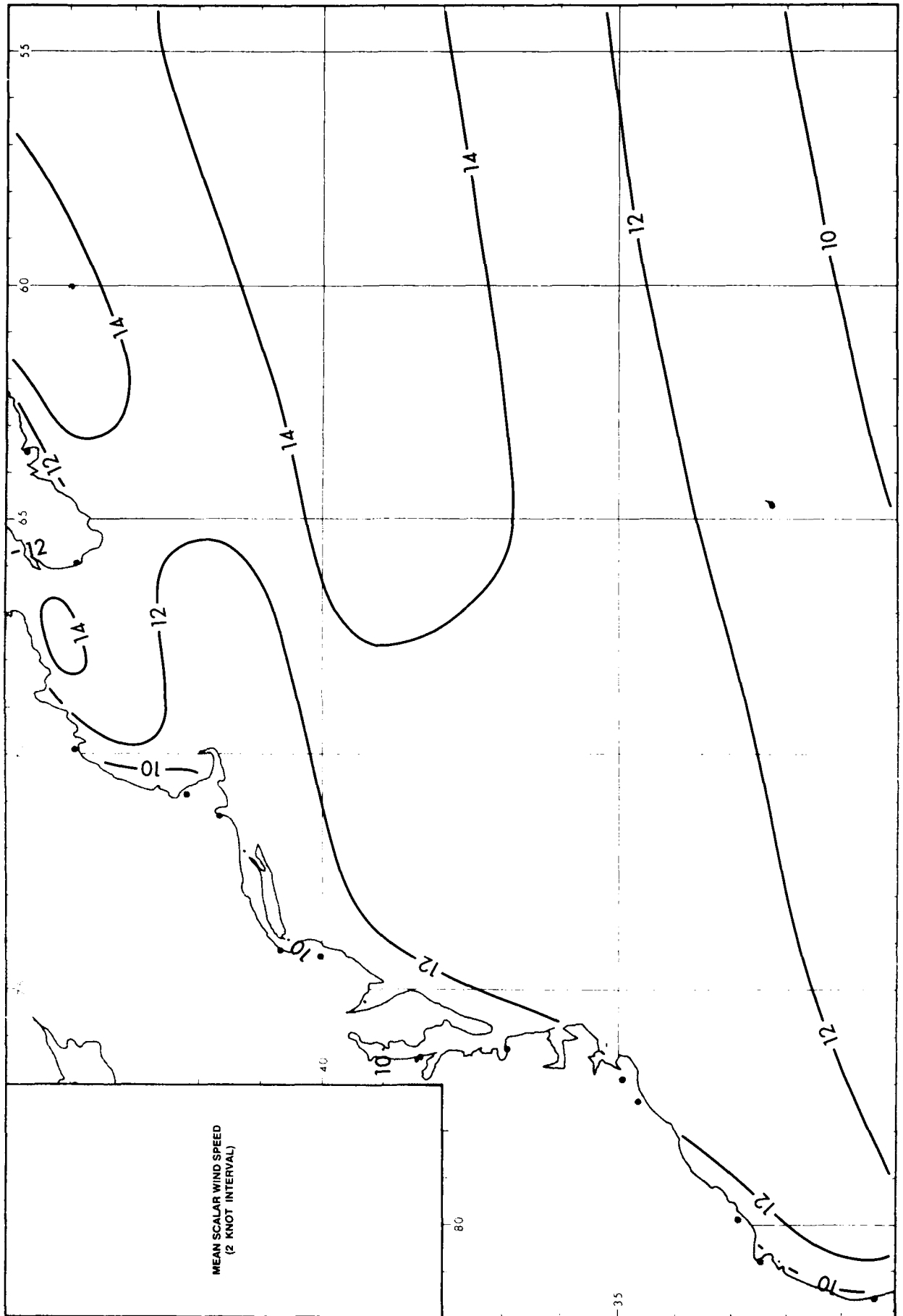






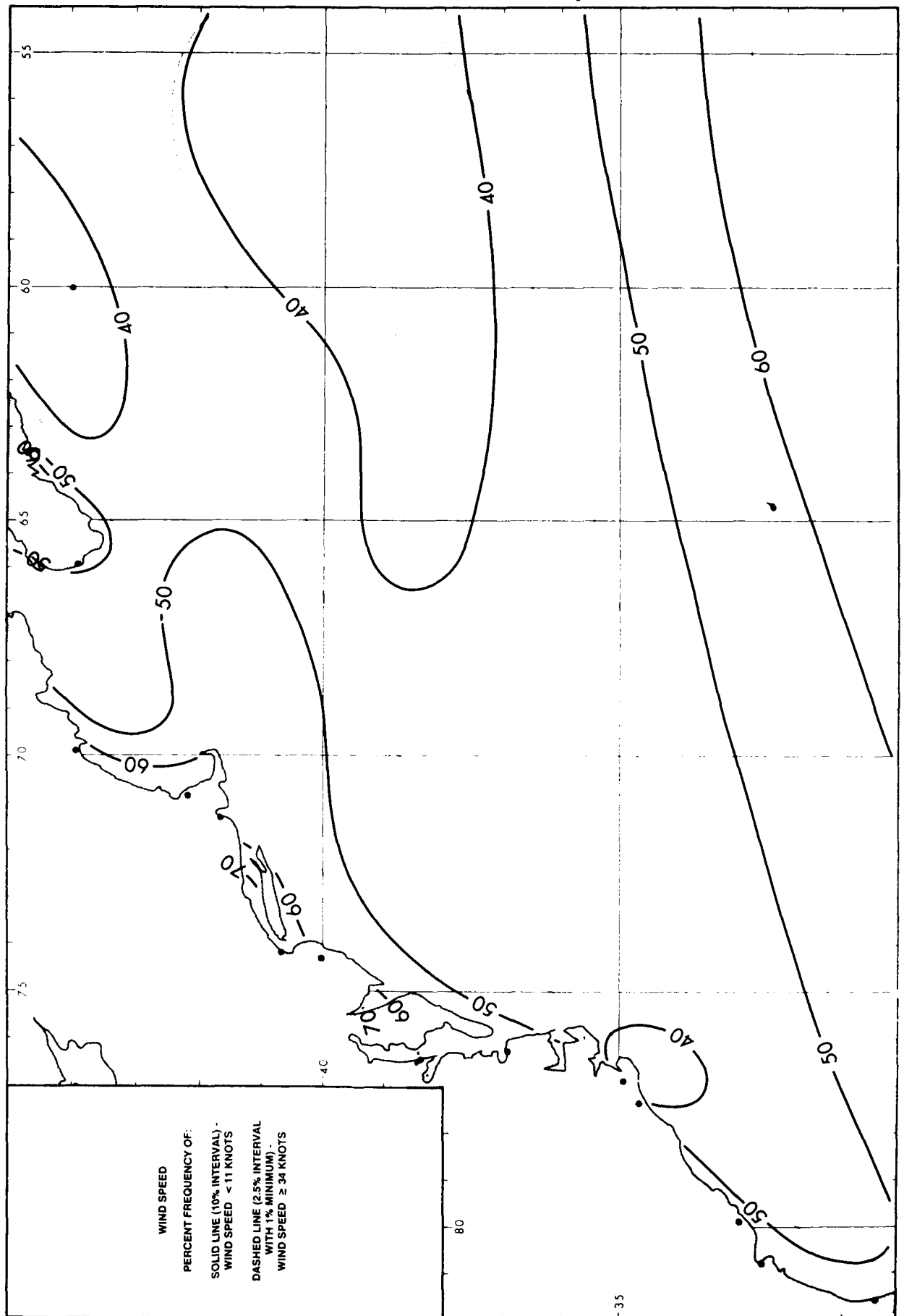
September

Mean Scalar Wind Speed



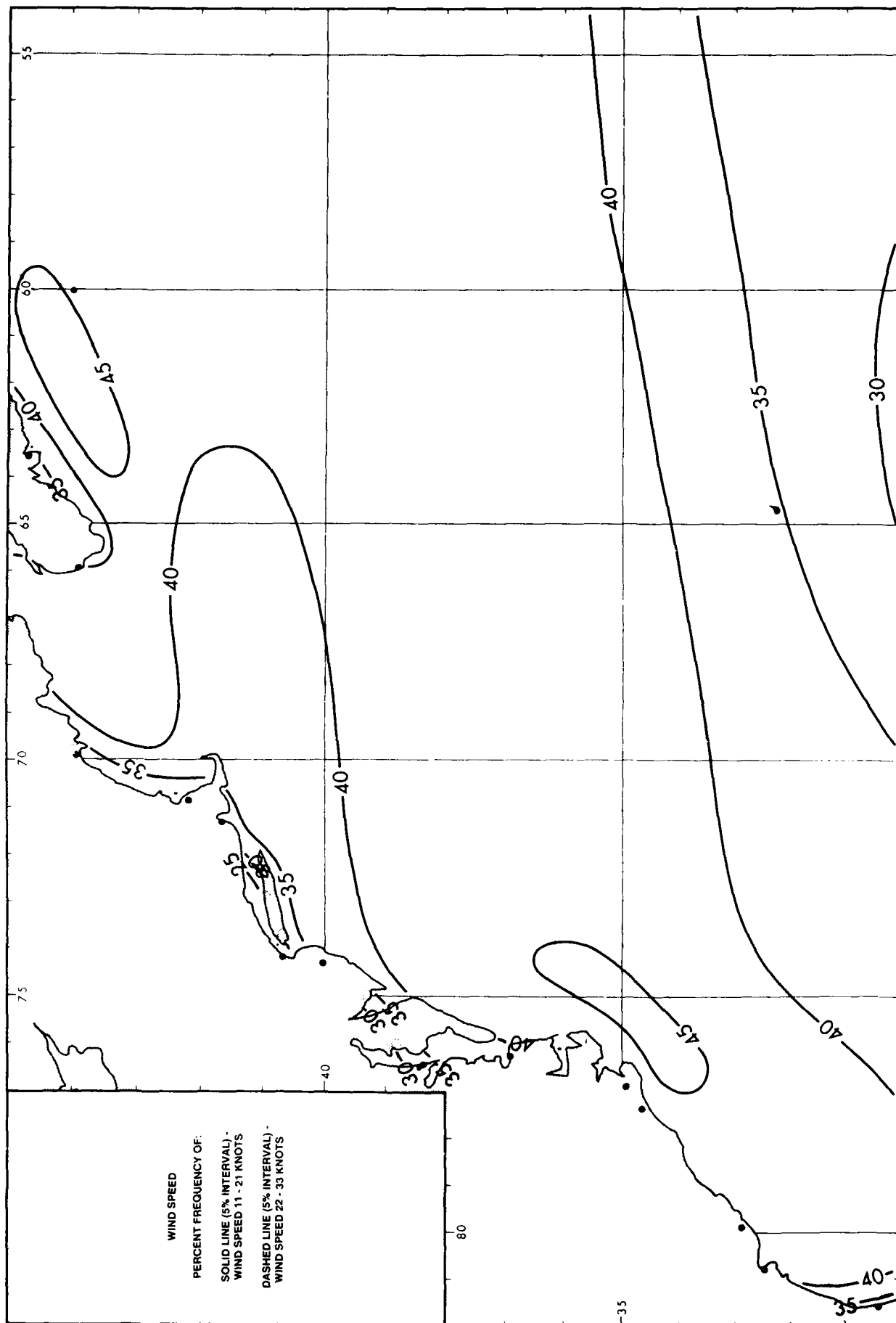
September

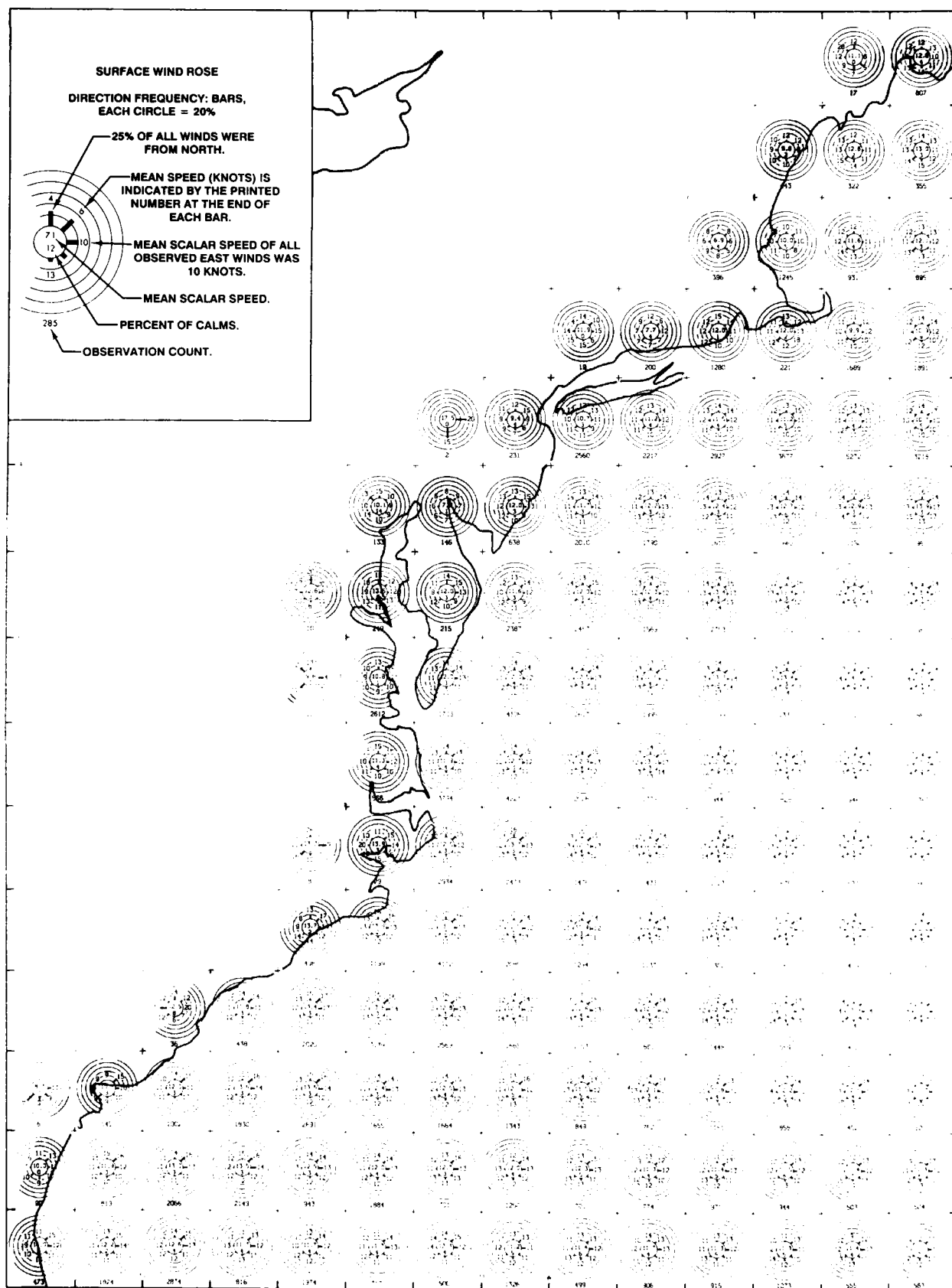
Wind Speed <11 and ≥ 34 Knots

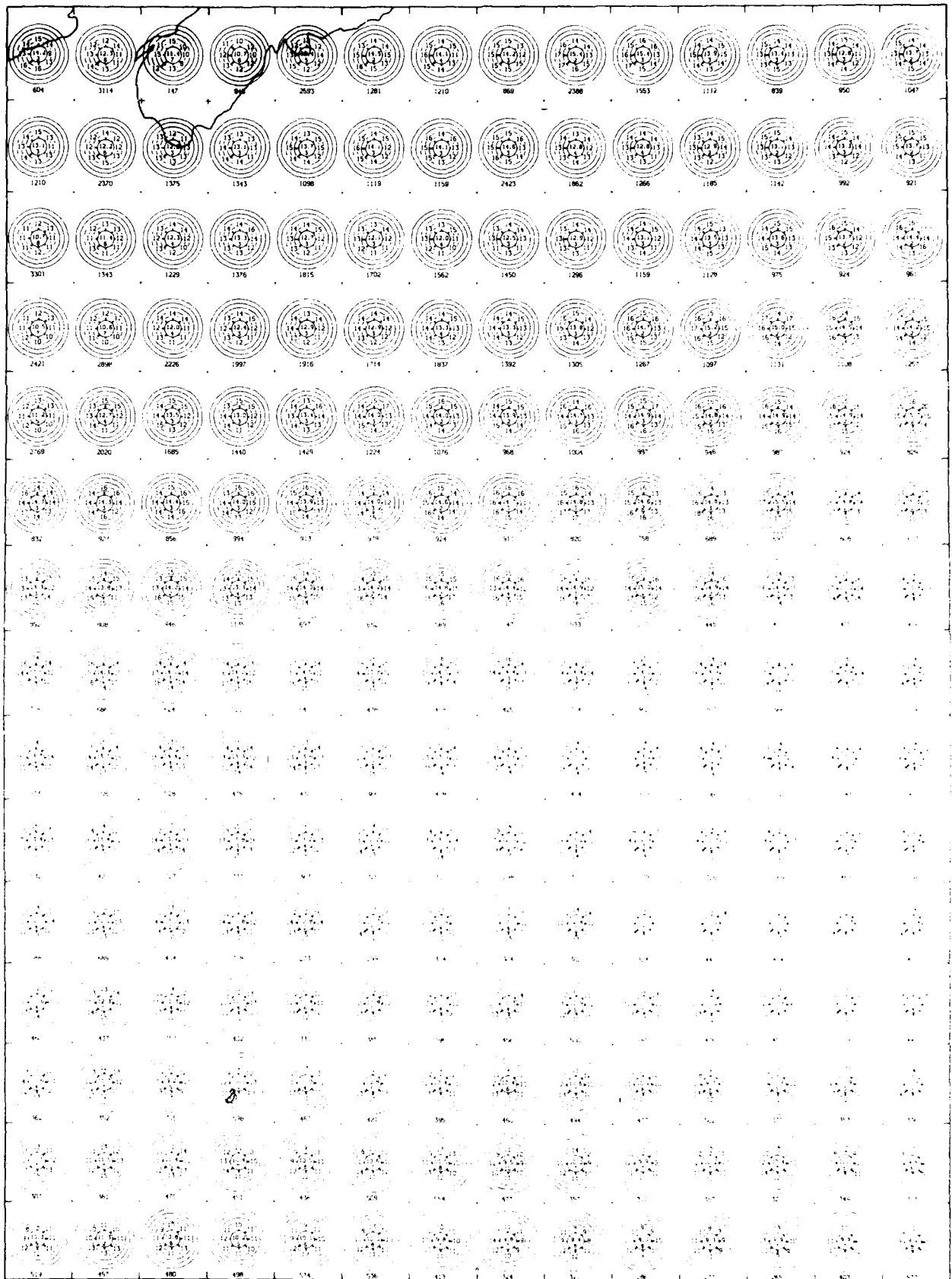


September

Wind Speed 11 - 21 and 22 - 33 Knots

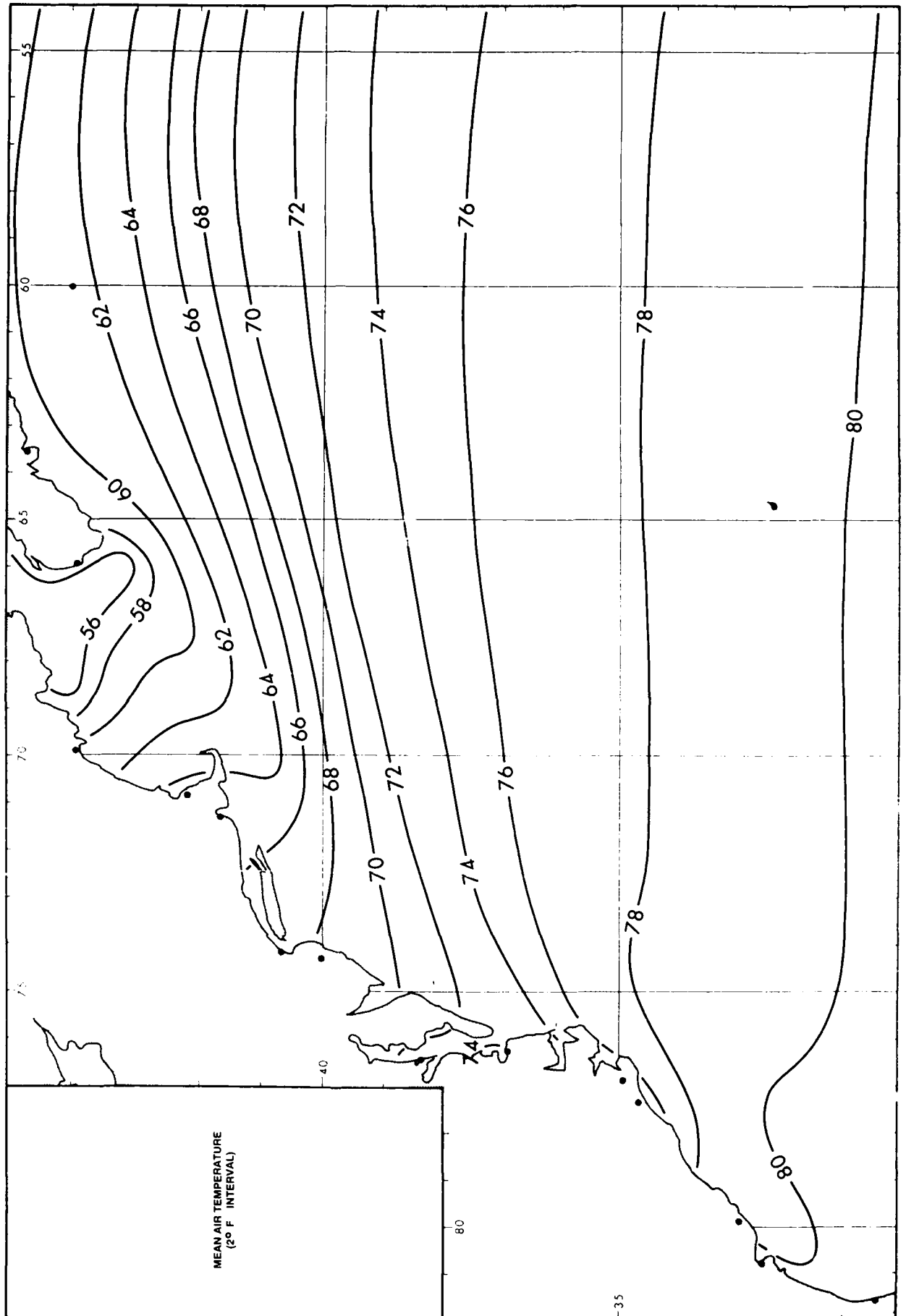






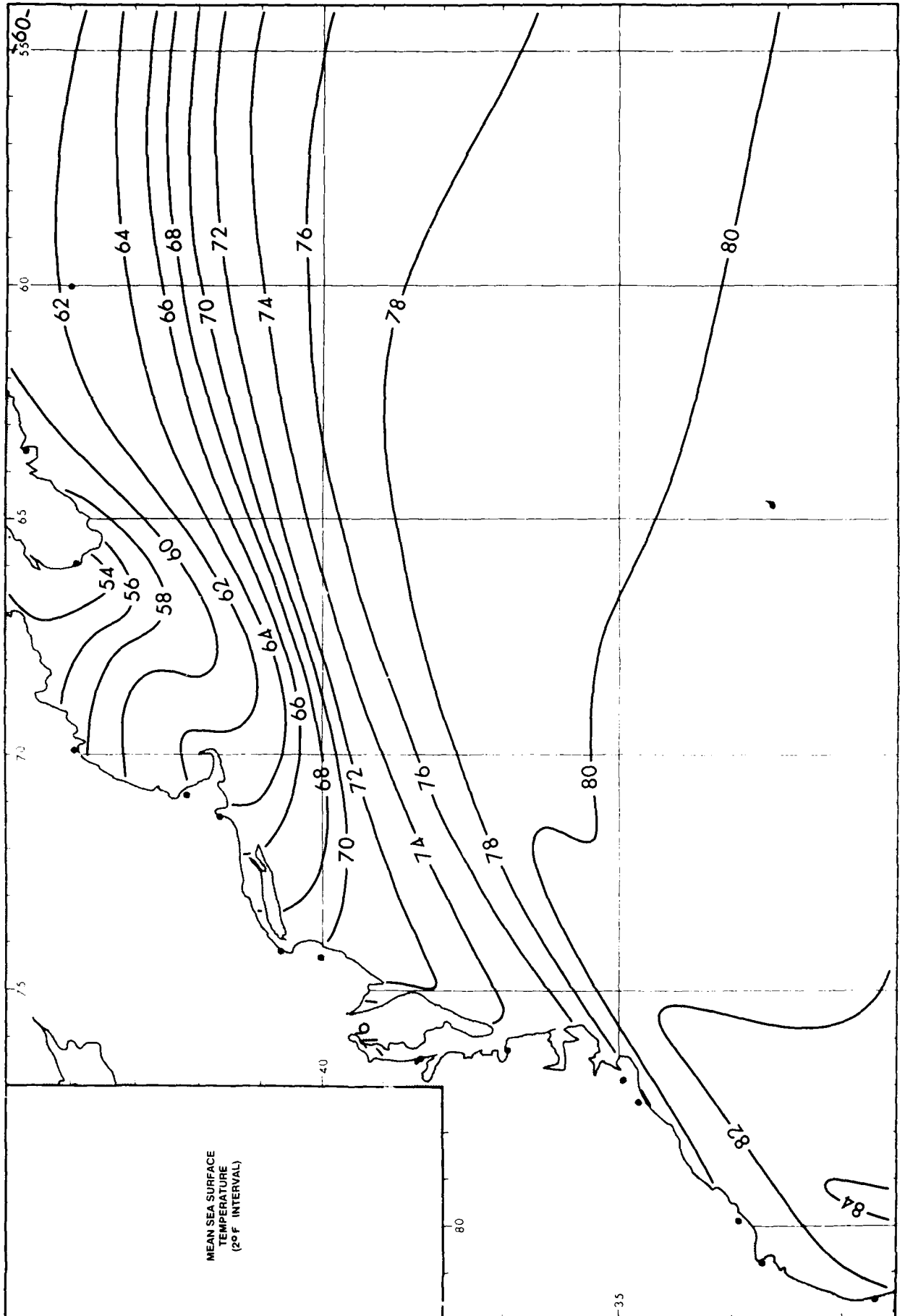
September

Mean Air Temperature



September

Mean Sea Surface Temperature



WAVE HEIGHT - FREQUENCIES
PERCENT FREQUENCY OF VARIOUS
RANGES WITHIN ONE - DEGREE
QUADRANGLES.

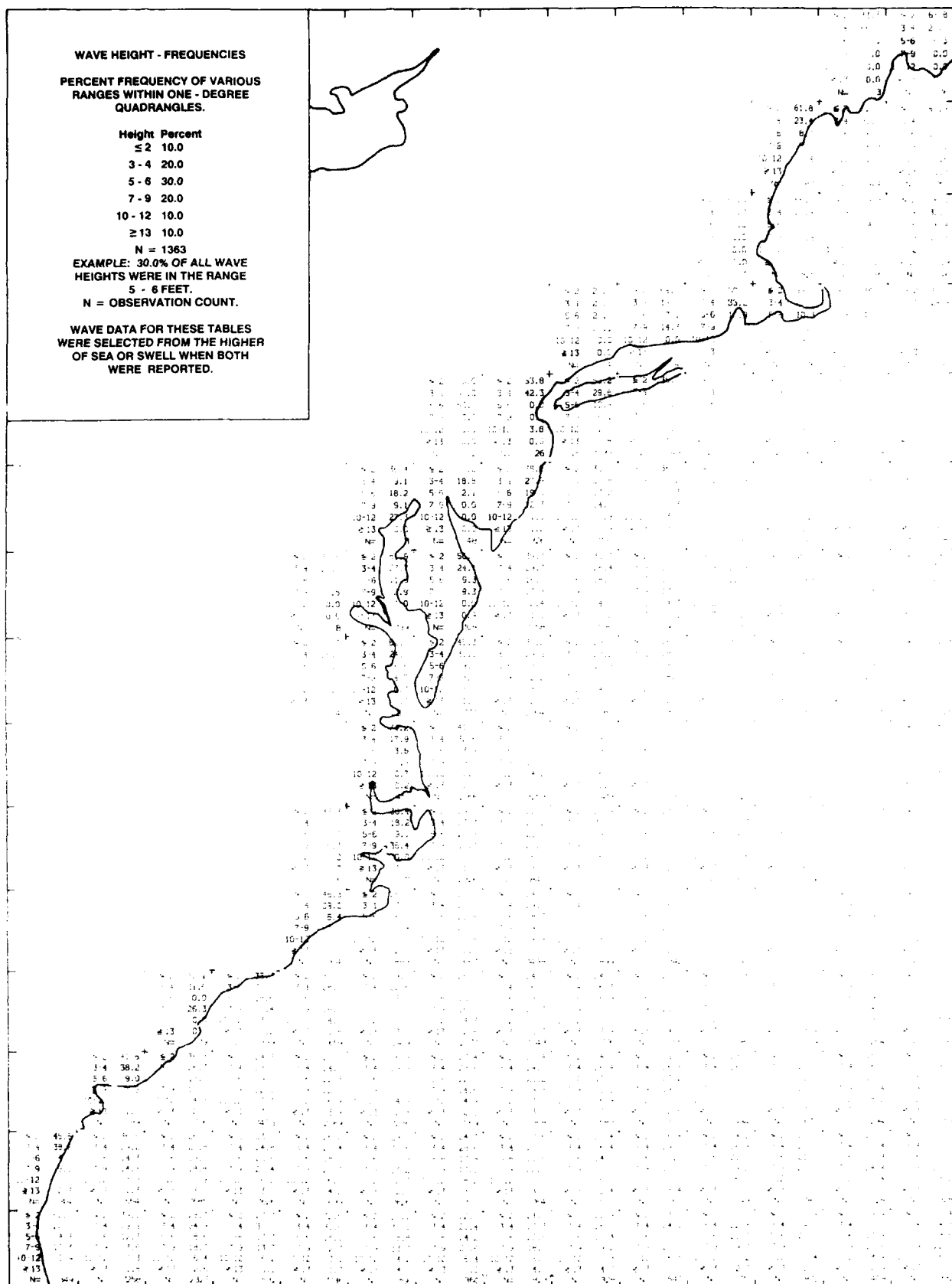
Height	Percent
≤ 2	10.0
3 - 4	20.0
5 - 6	30.0
7 - 9	20.0
10 - 12	10.0
≥ 13	10.0

N = 1363

EXAMPLE: 30.0% OF ALL WAVE
 HEIGHTS WERE IN THE RANGE
 5 - 6 FEET.

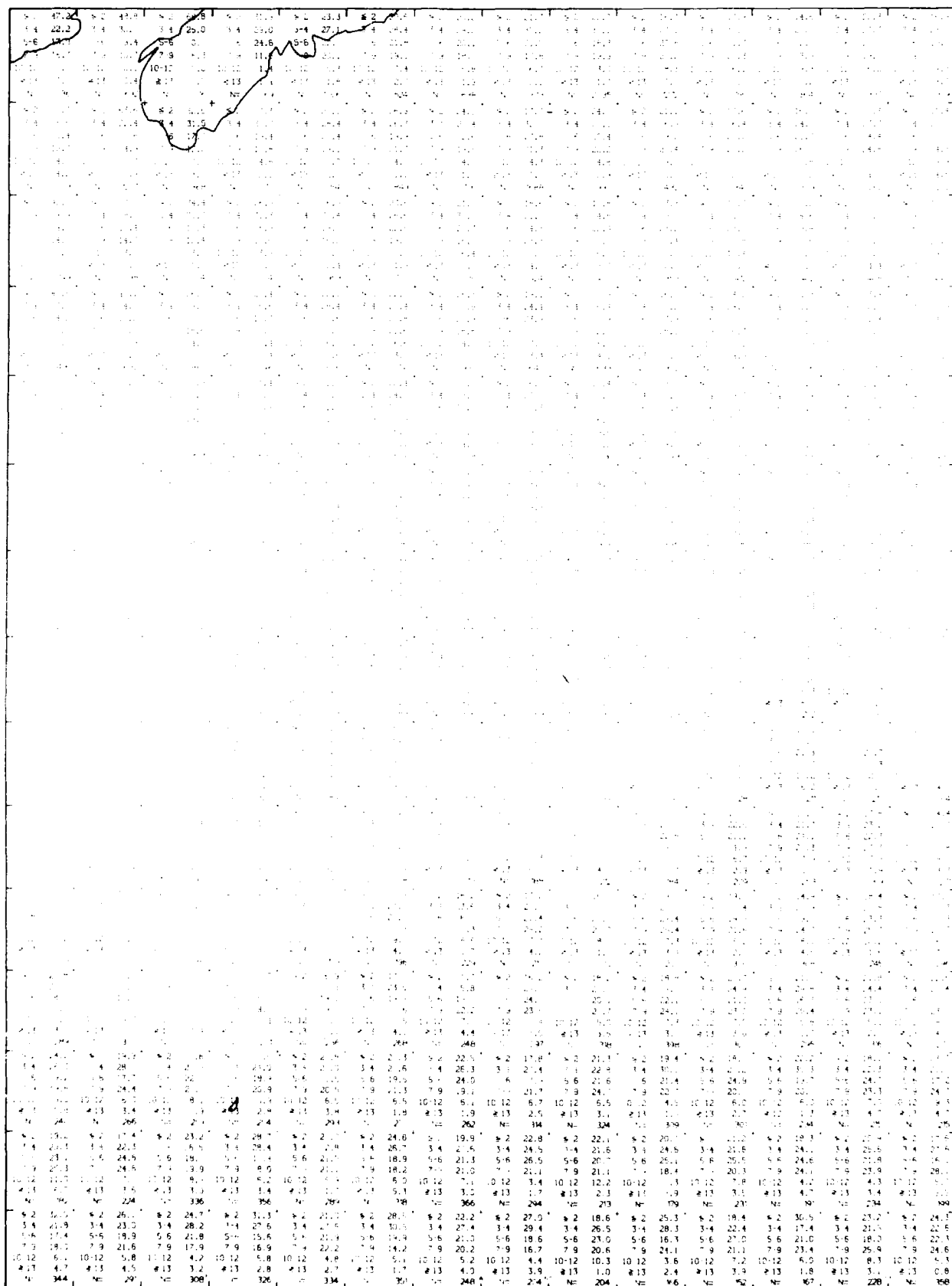
N = OBSERVATION COUNT.

WAVE DATA FOR THESE TABLES
 WERE SELECTED FROM THE HIGHER
 OF SEA OR SWELL WHEN BOTH
 WERE REPORTED.



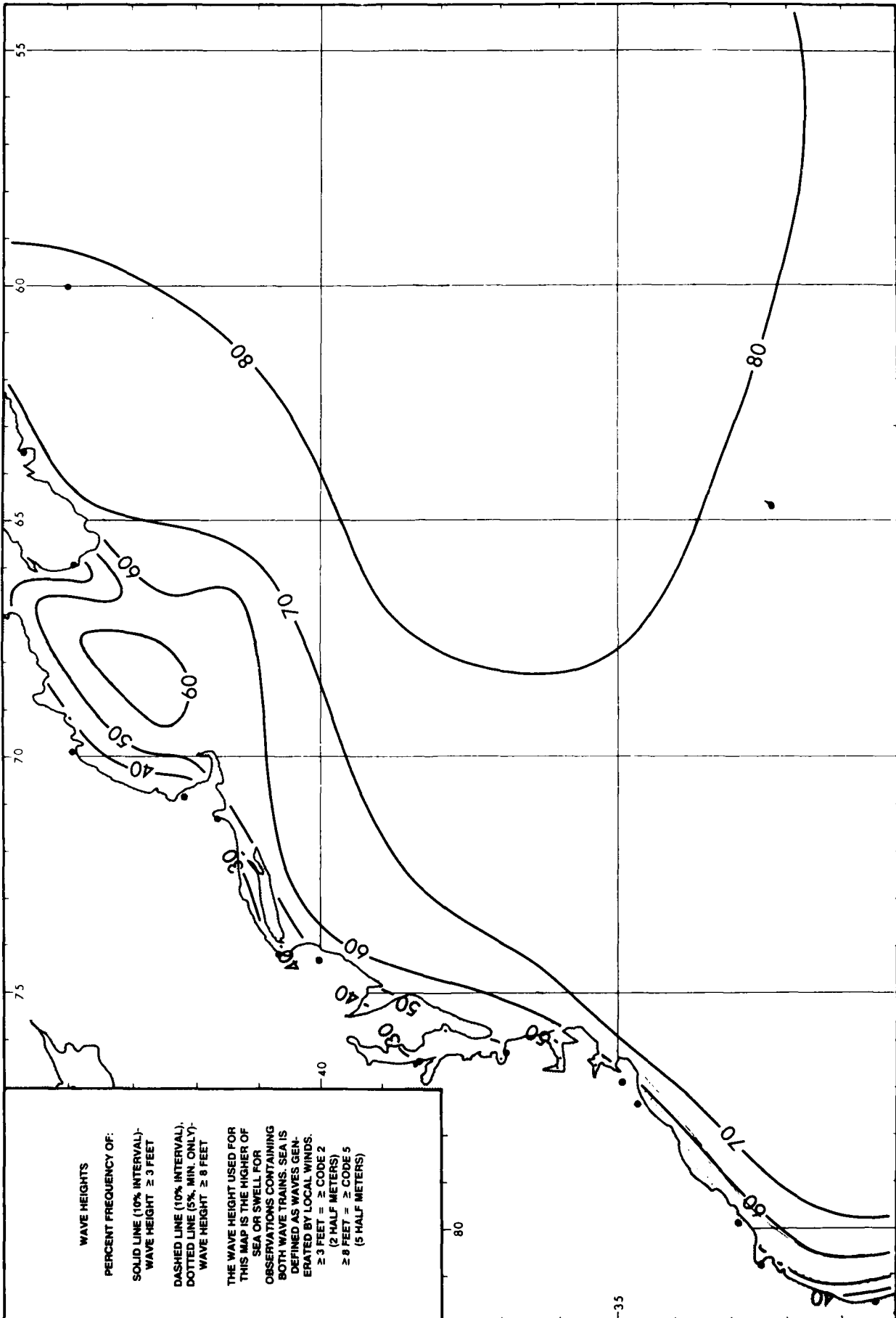
September

Wave Height



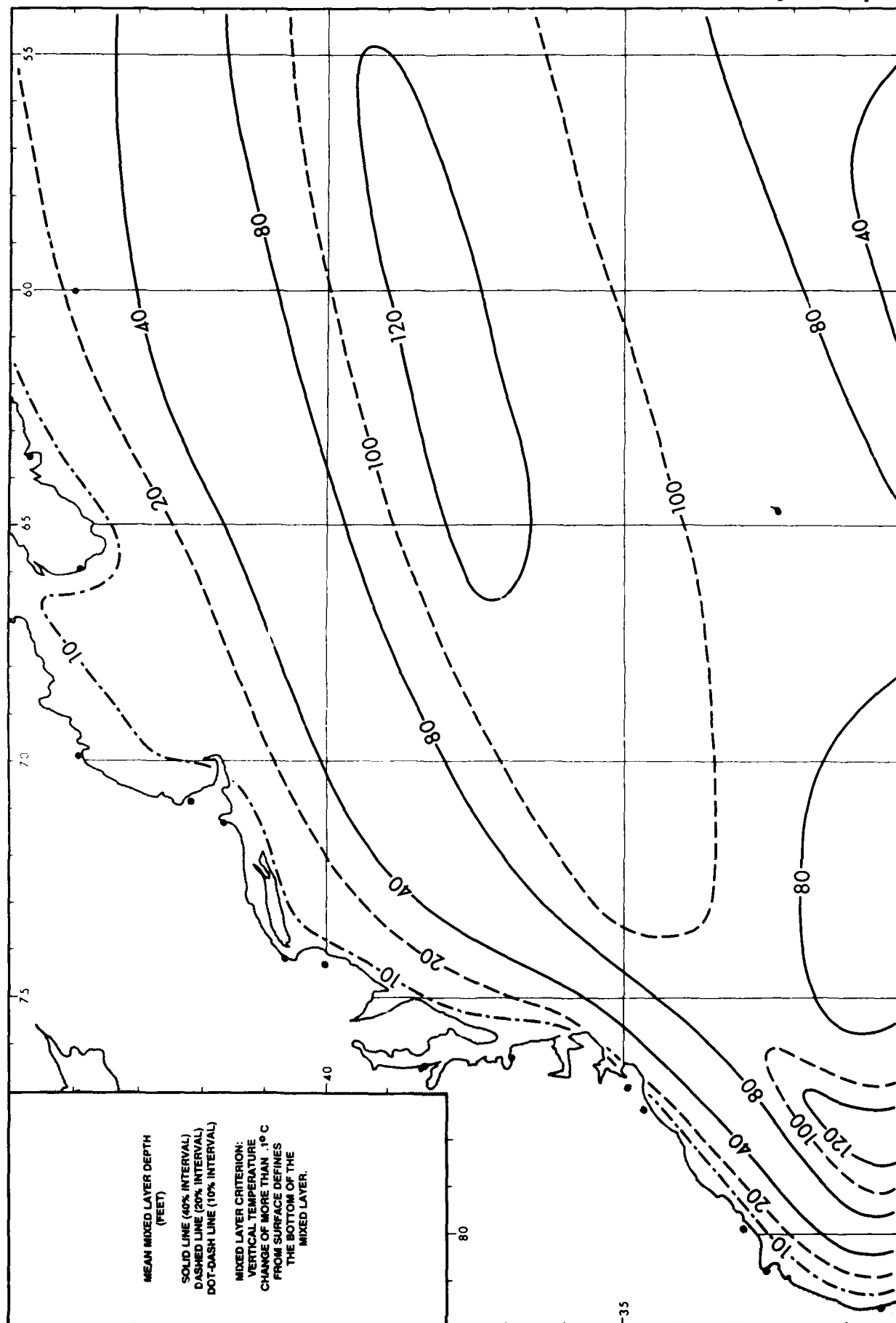
September

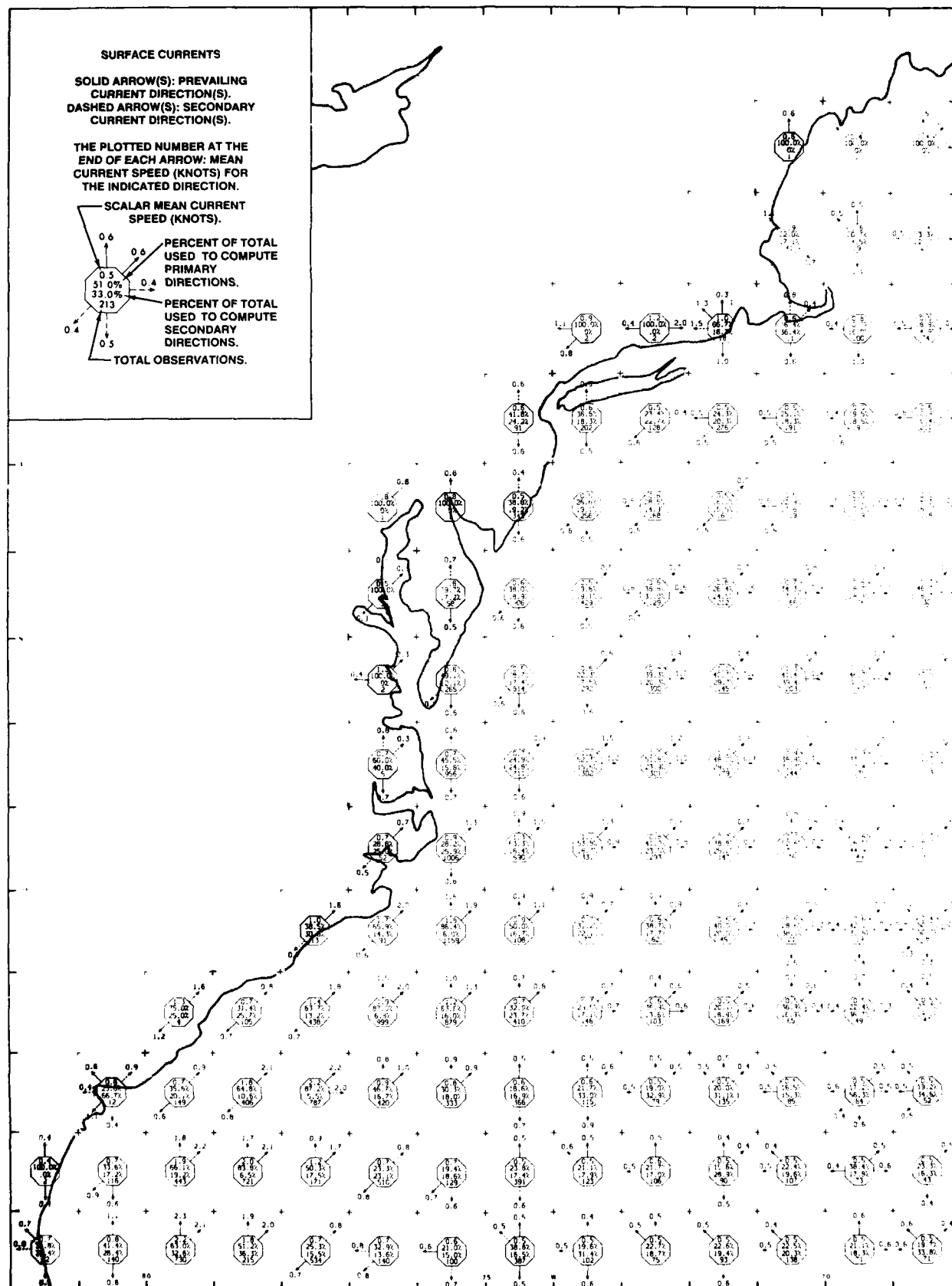
Wave Height

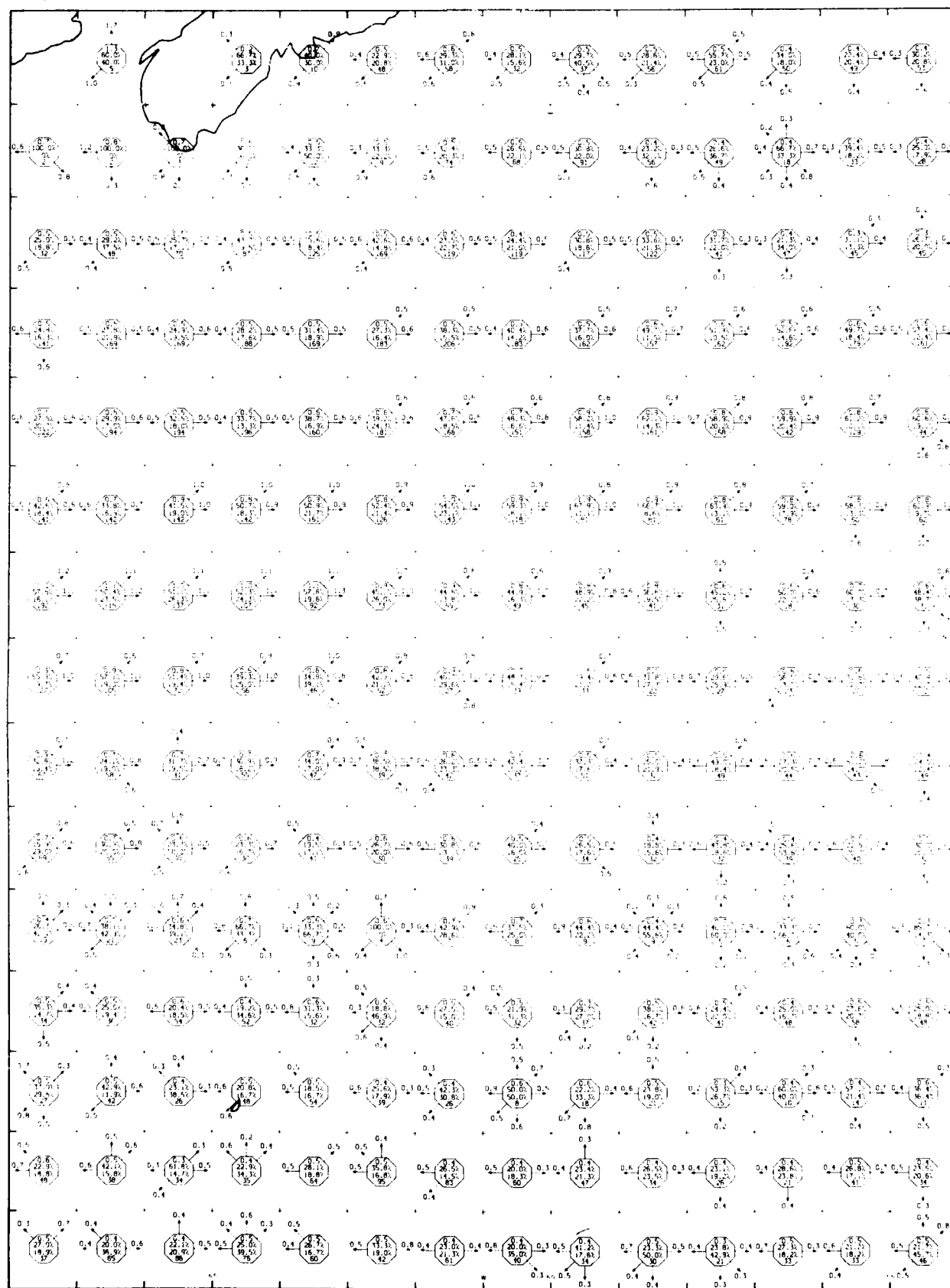


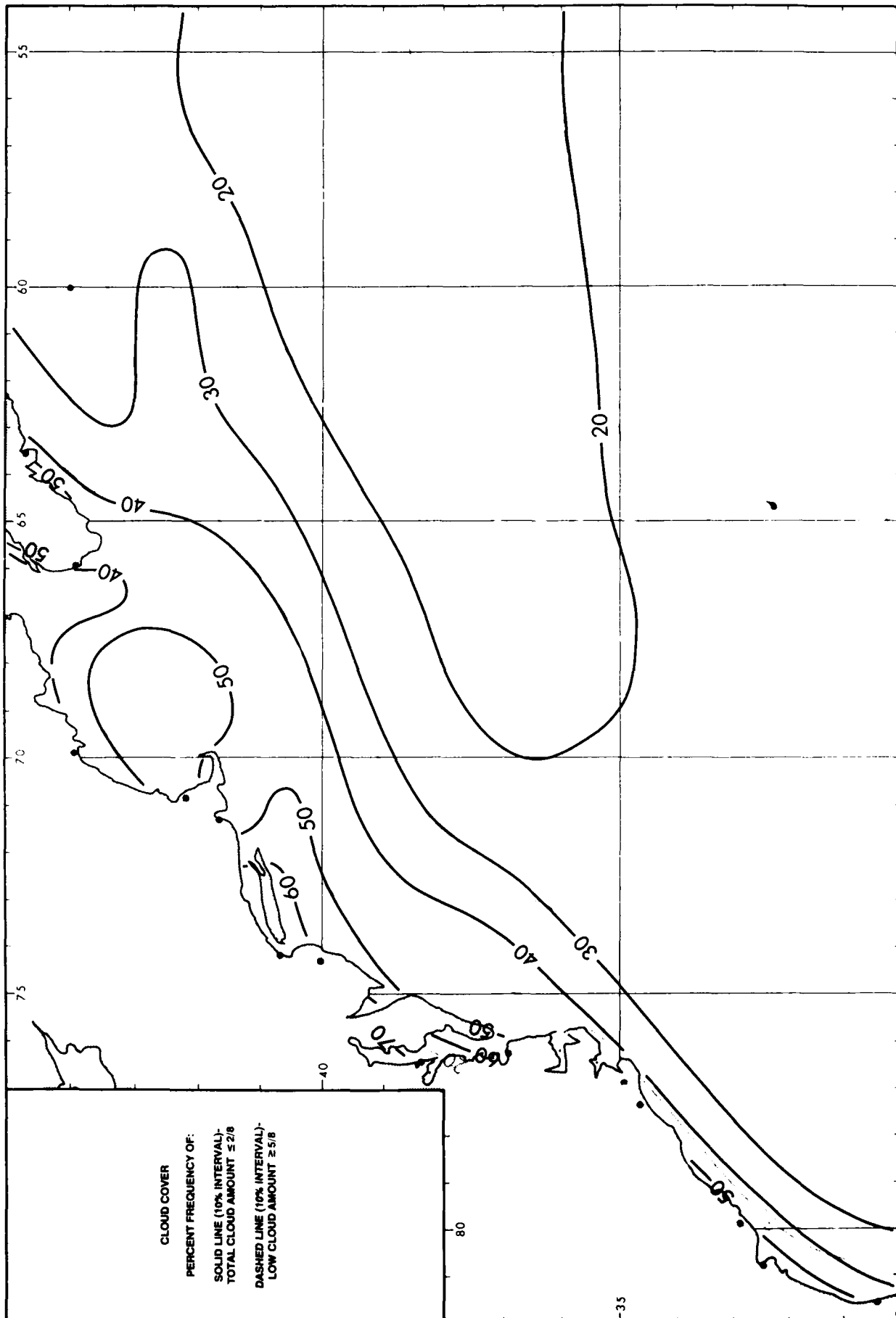
September

Mean Mixed Layer Depth



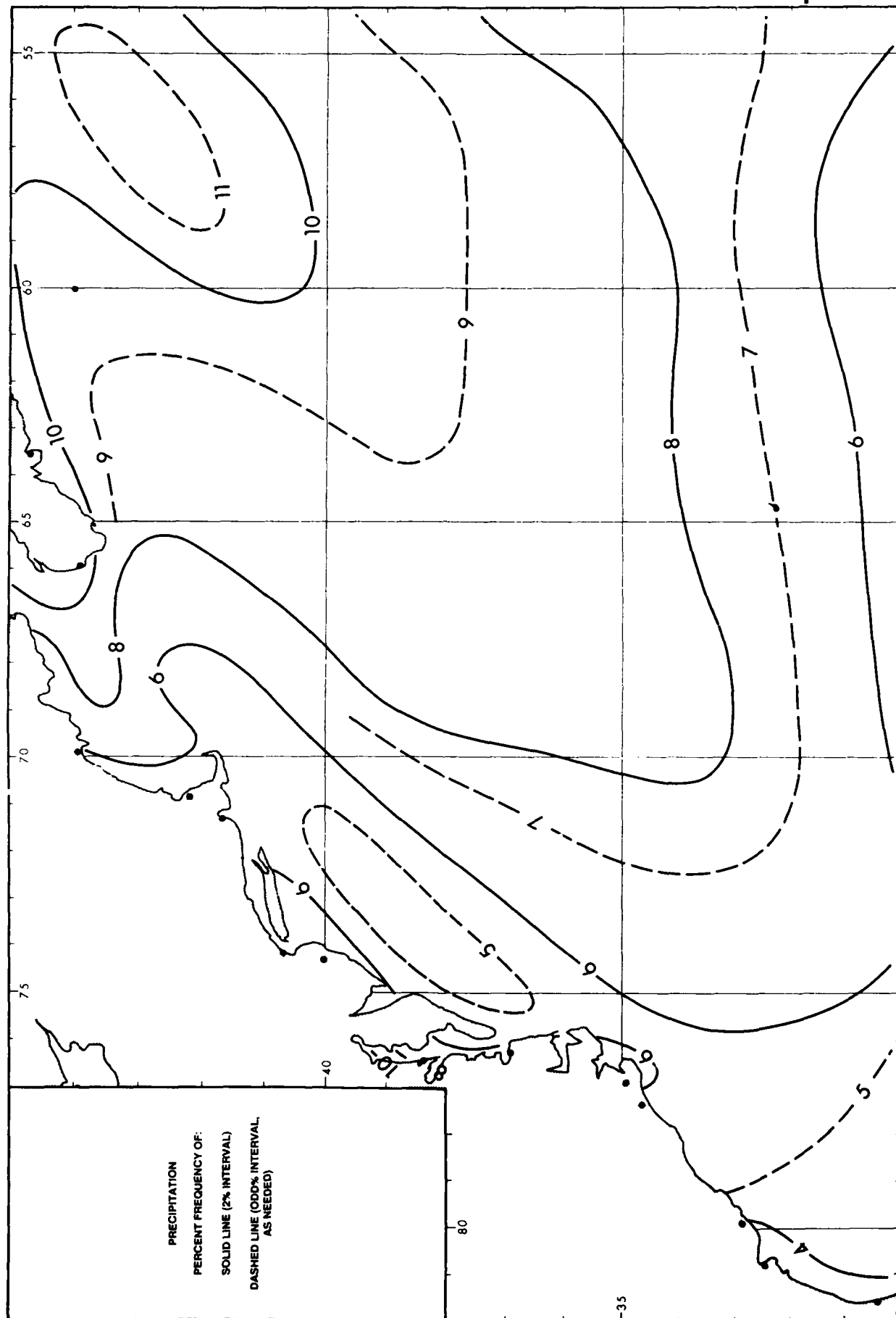


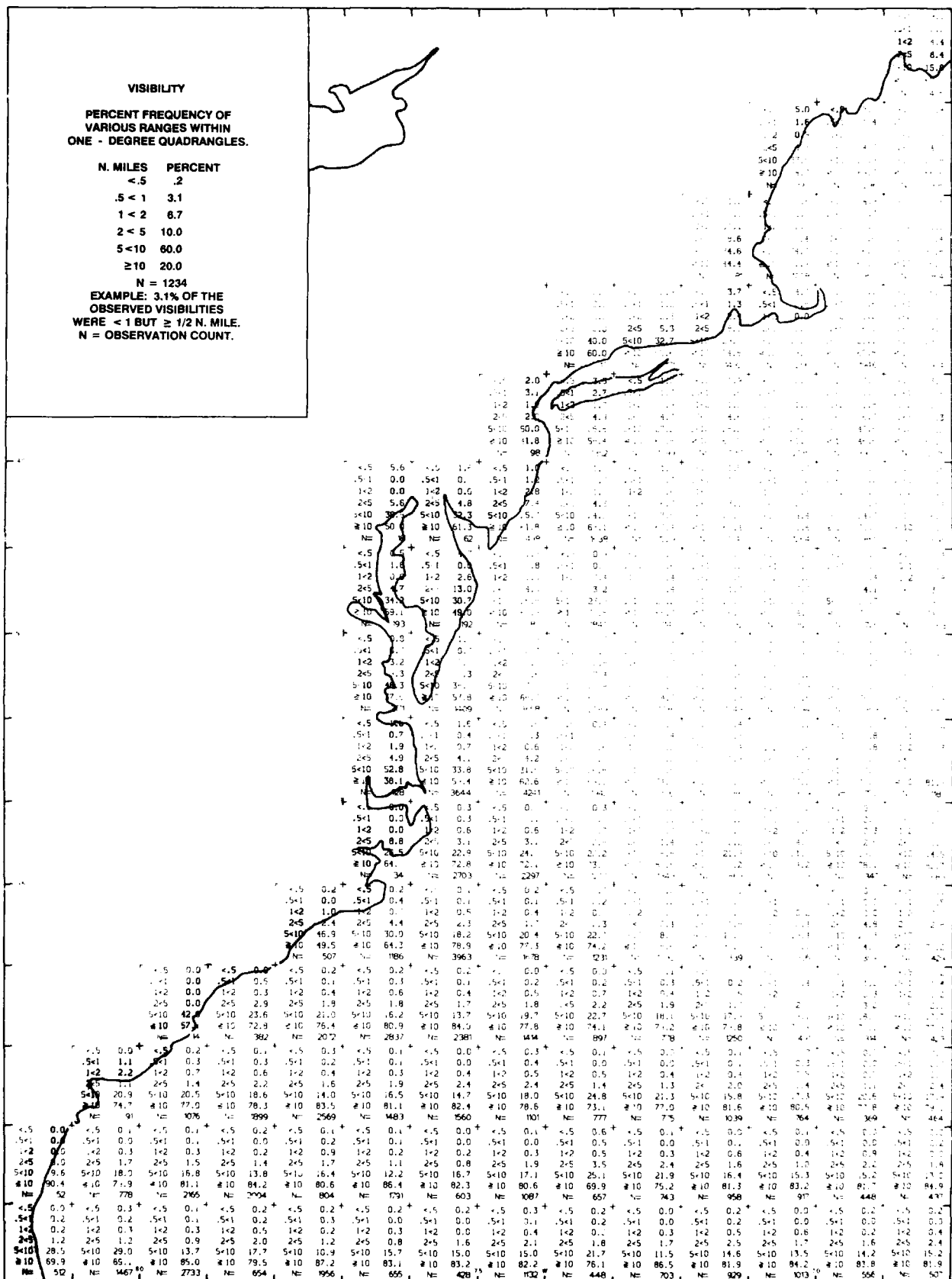




October

Precipitation

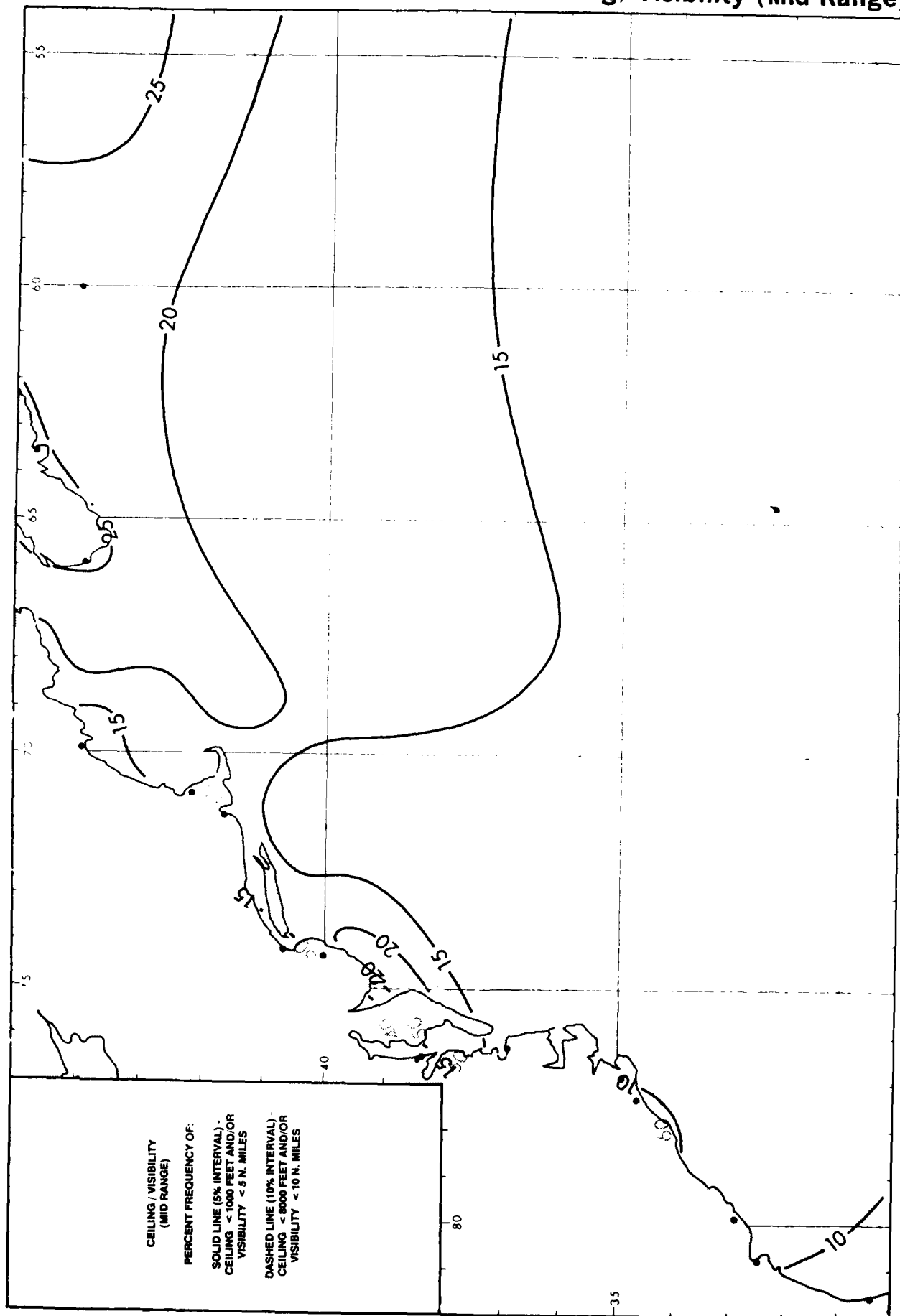




[illegible][illegible]

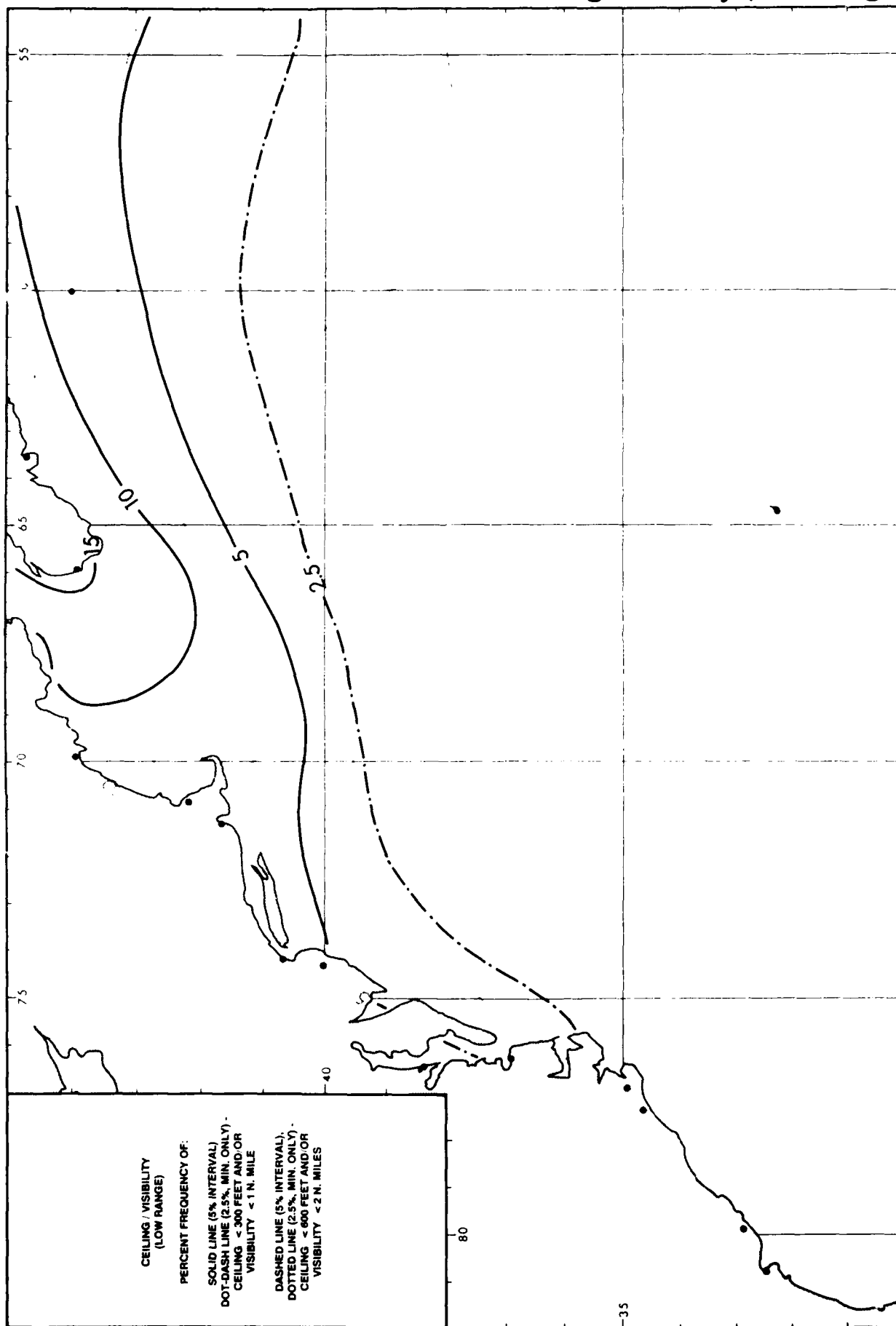
October

Ceiling/Visibility (Mid Range)



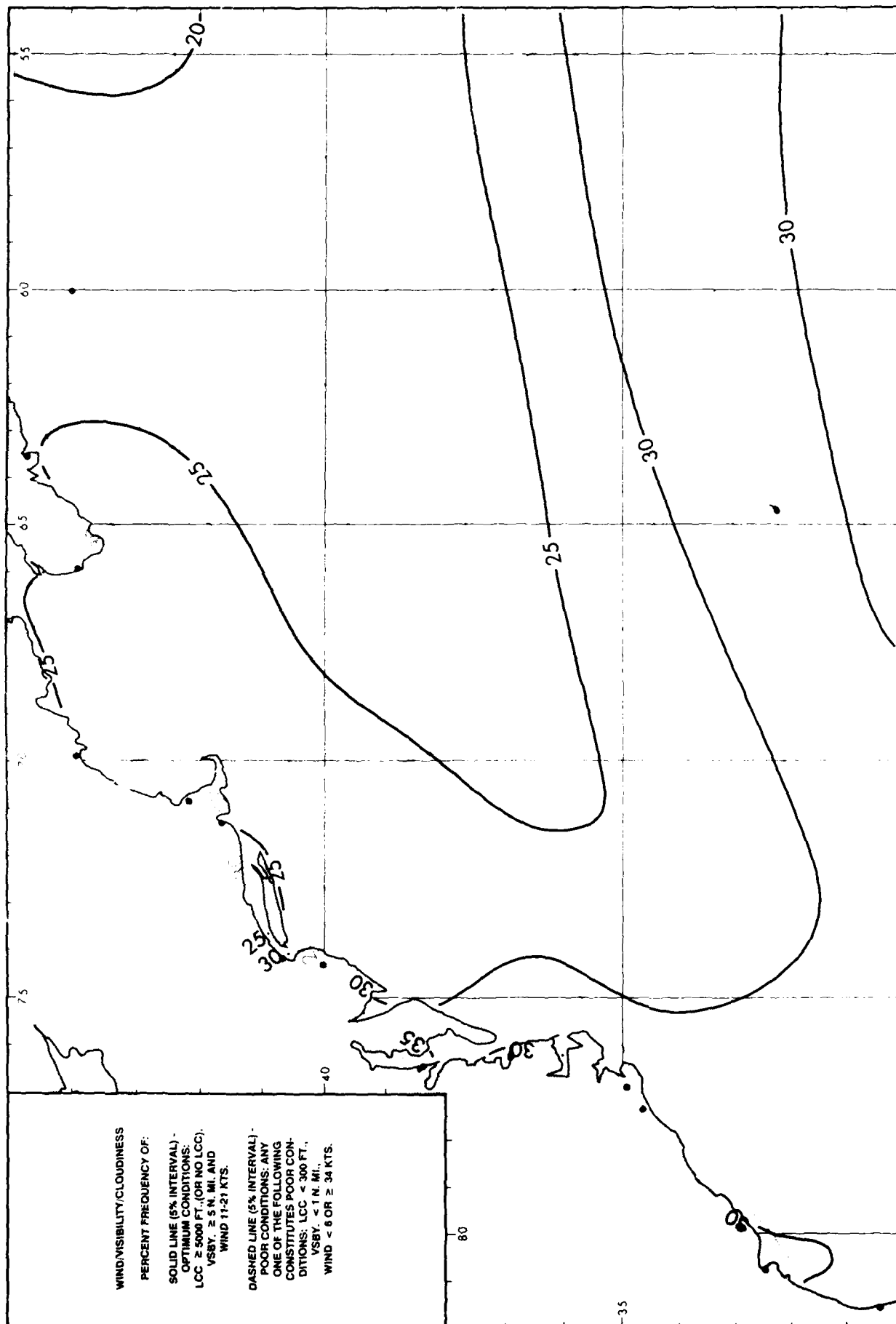
October

Ceiling / Visibility (Low Range)



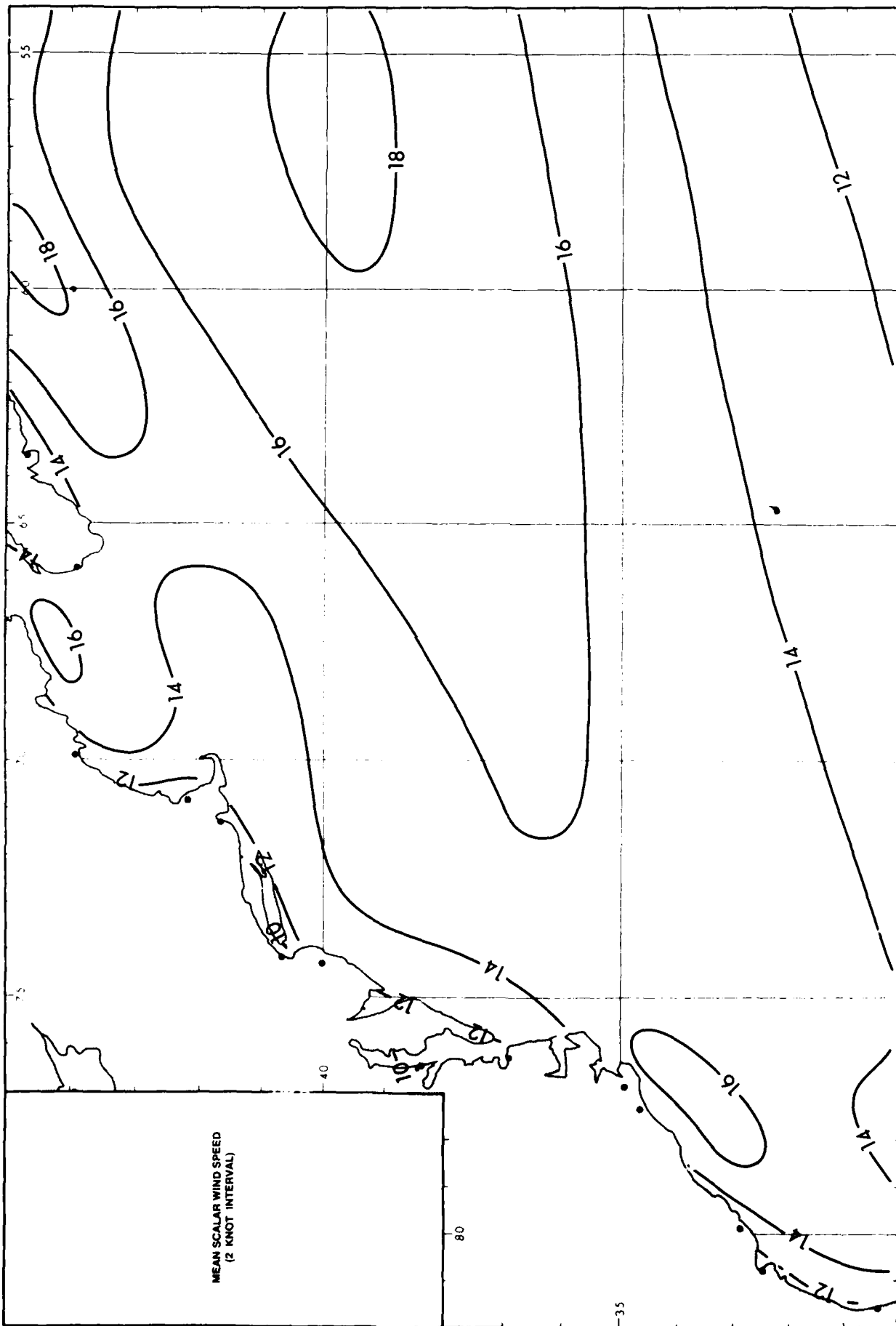
October

Wind / Visibility / Cloudiness



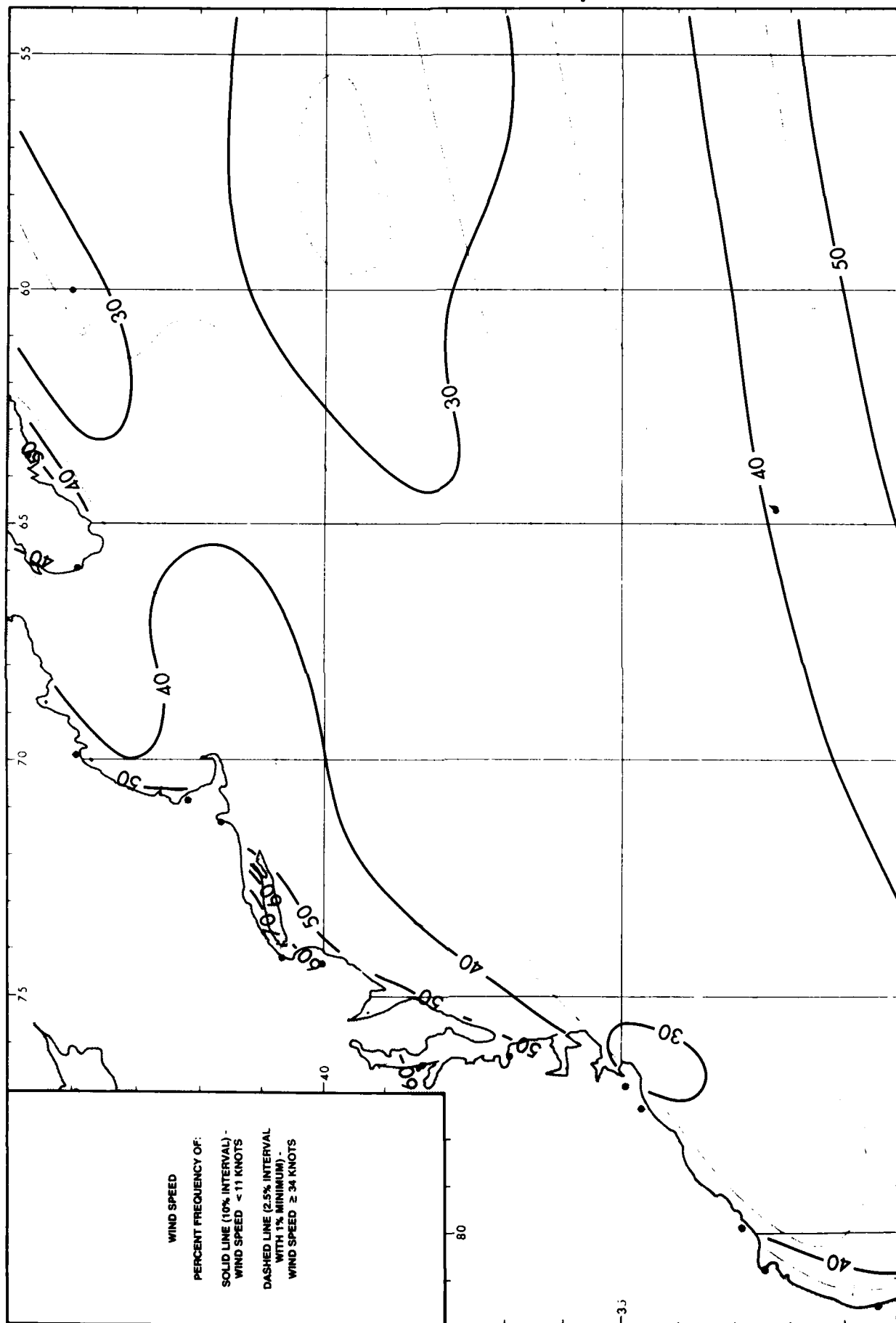
October

Mean Scalar Wind Speed



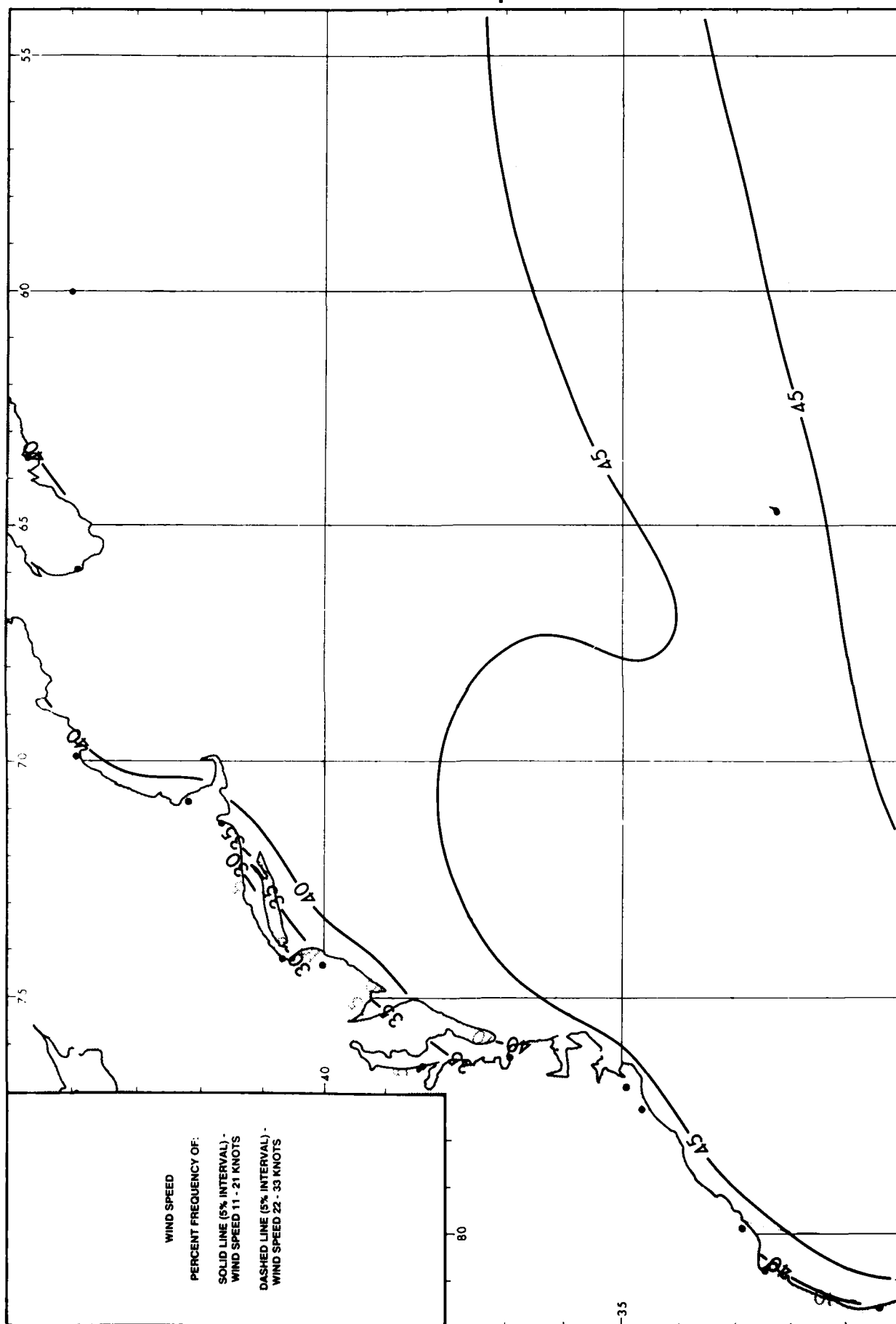
October

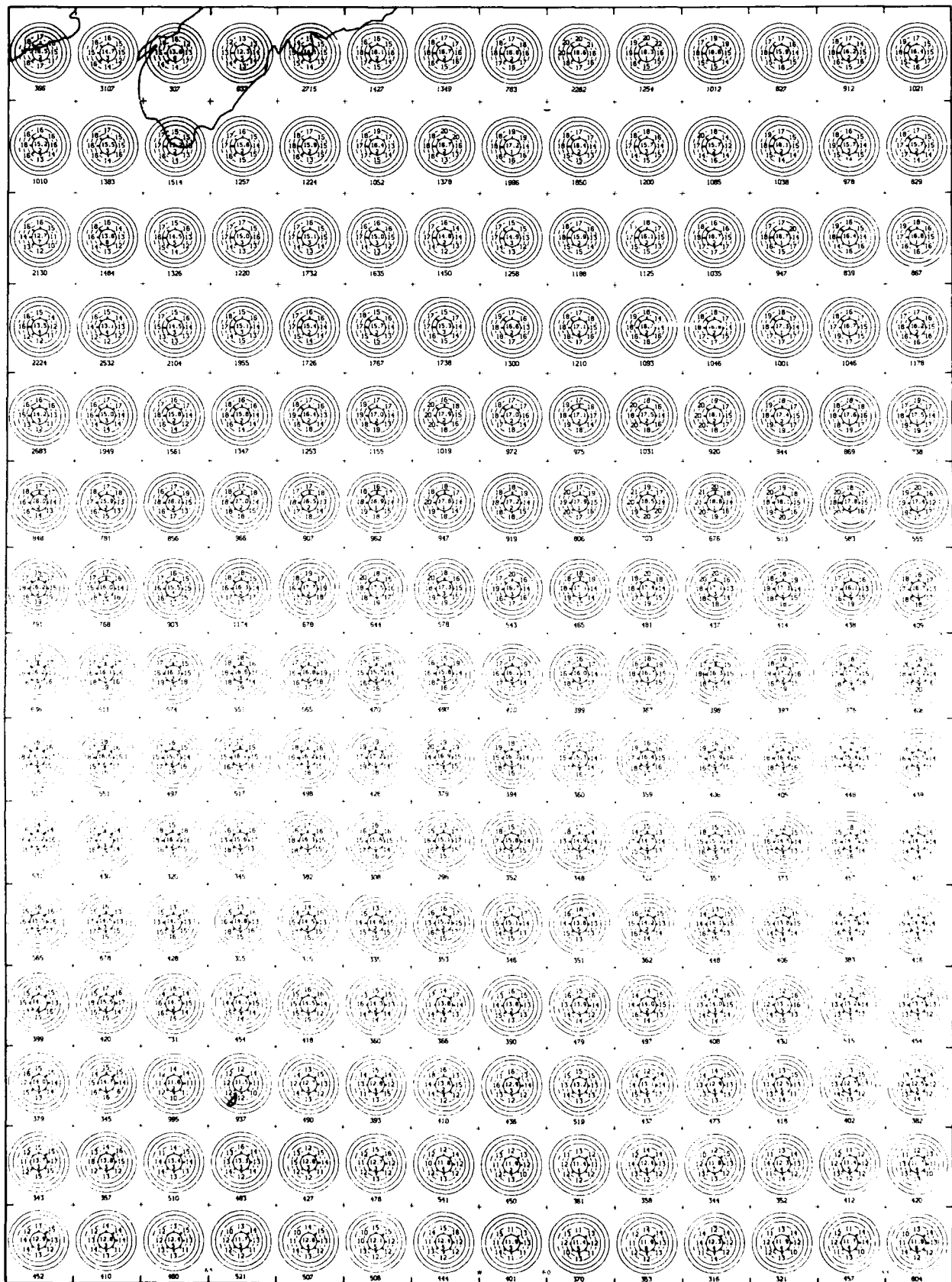
Wind Speed <11 and ≥ 34 Knots



October

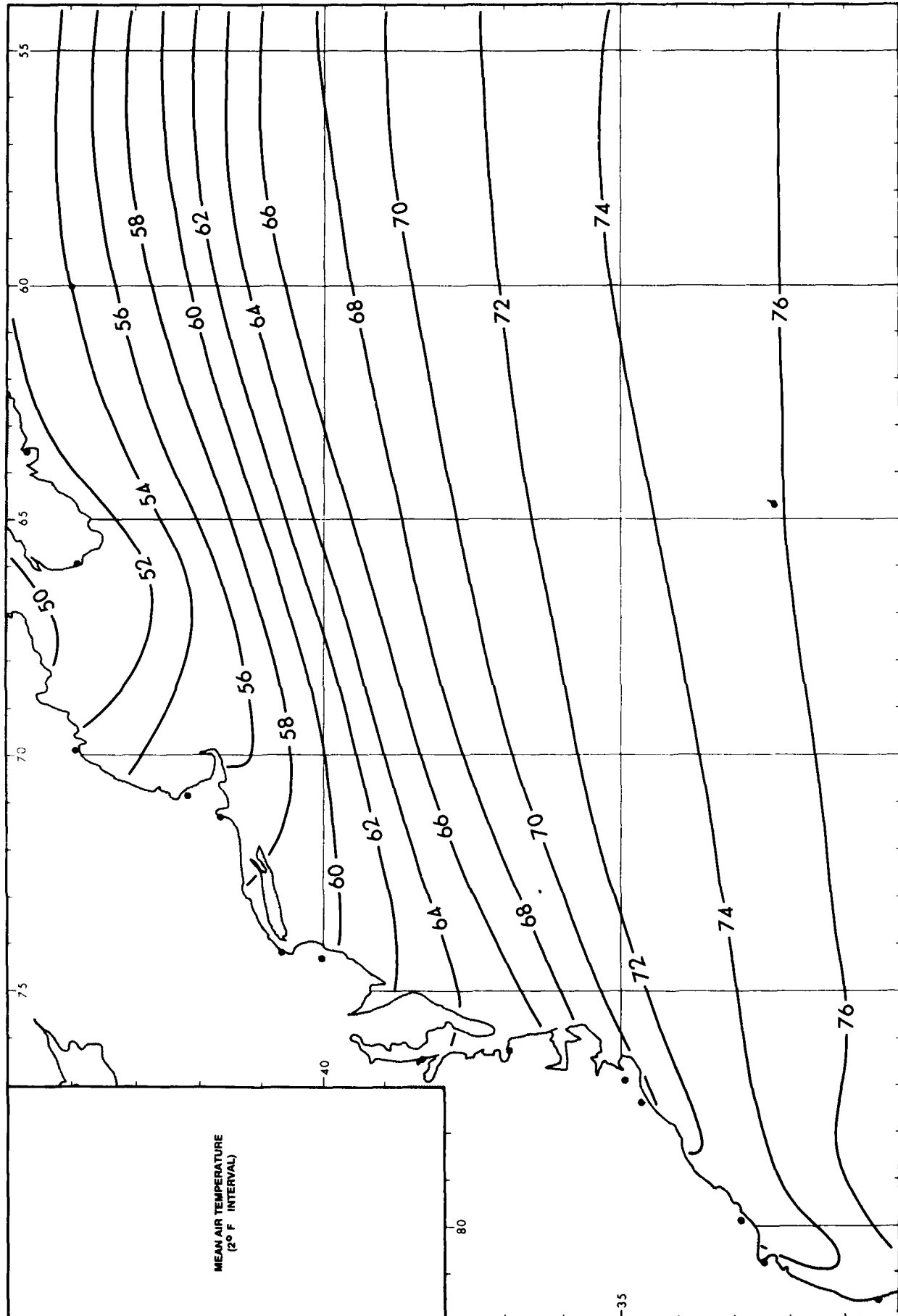
Wind Speed 11 - 21 and 22 - 33 Knots





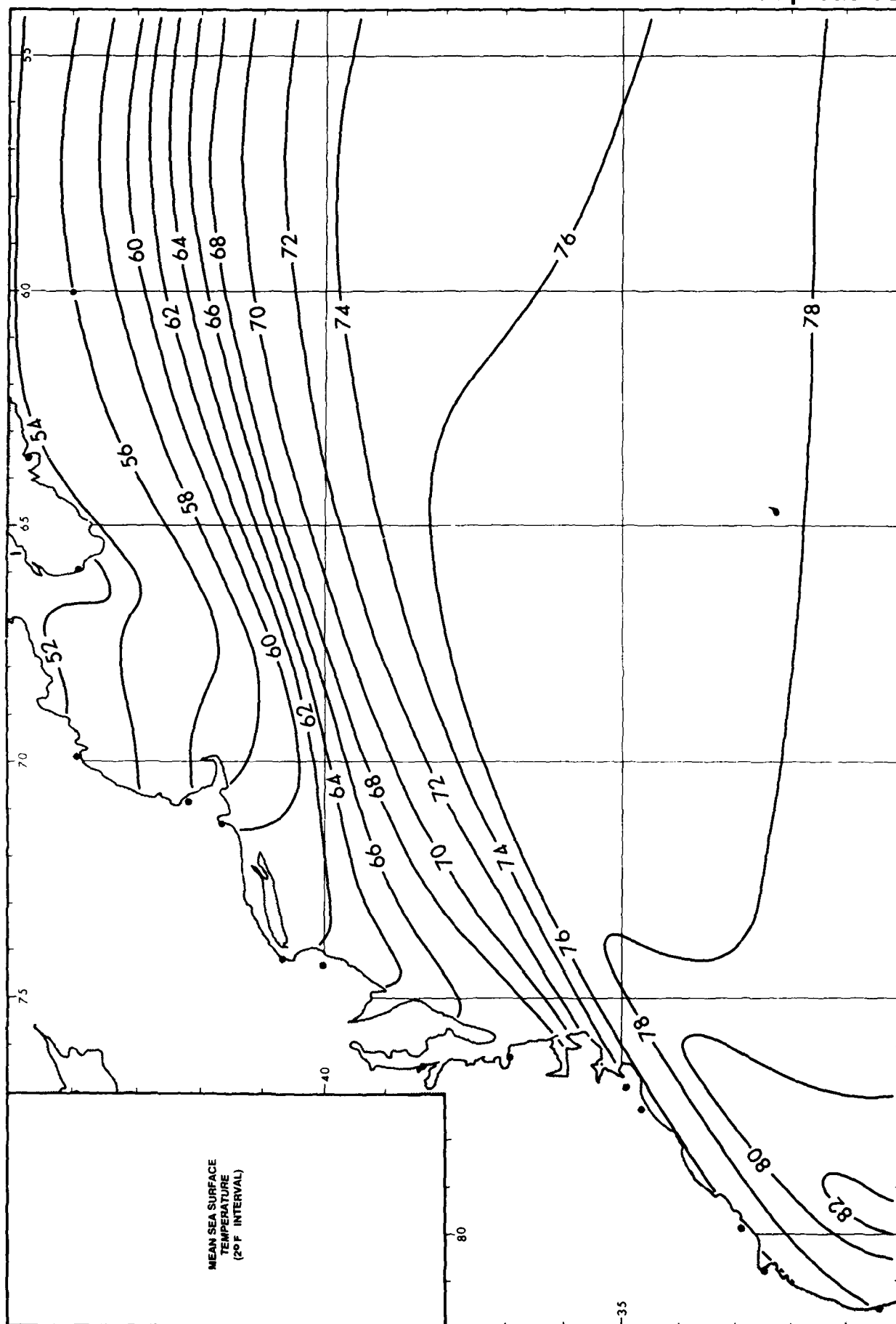
October

Mean Air Temperature



October

Mean Sea Surface Temperature



WAVE HEIGHT - FREQUENCIES
PERCENT FREQUENCY OF VARIOUS
RANGES WITHIN ONE - DEGREE
QUADRANGLES.

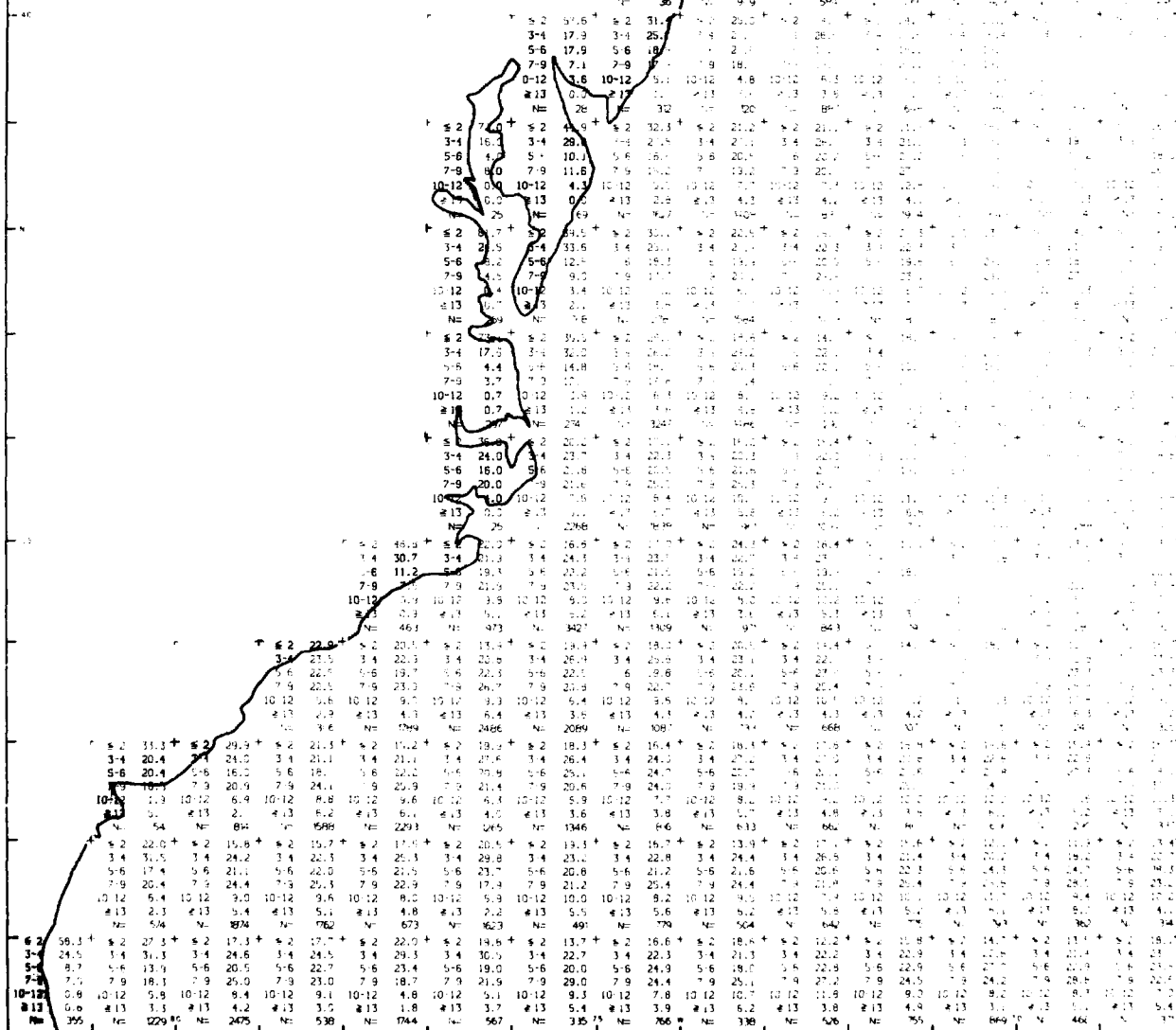
Height	Percent
≤ 2	10.0
3 - 4	20.0
5 - 6	30.0
7 - 9	20.0
10 - 12	10.0
≥ 13	10.0

N = 1363

EXAMPLE: 30.0% OF ALL WAVE
 HEIGHTS WERE IN THE RANGE
 5 - 6 FEET.

N = OBSERVATION COUNT.

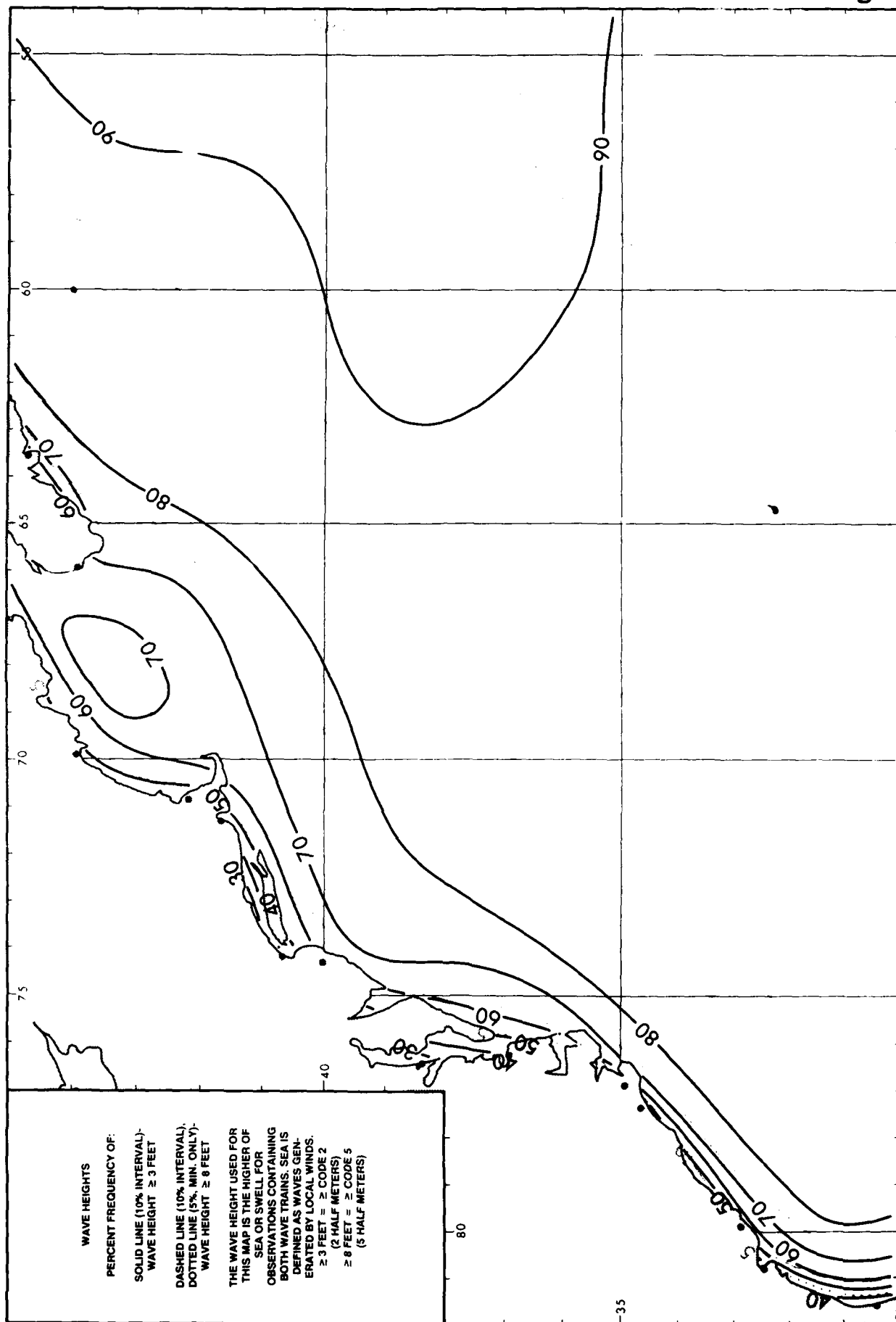
WAVE DATA FOR THESE TABLES
 WERE SELECTED FROM THE HIGHER
 OF SEA OR SWELL WHEN BOTH
 WERE REPORTED.



3.2	33.3	3.2	39.1	3.2	37.3	3.2	42.3	3.2	22.8	3.2	20.4	3.2	17.2	3.2	15.2	3.2	10.2	3.2	9.6	3.2	13.6	3.2	11.6	3.2	10.6	3.2	8.6	3.2	8.0
3.4	33.3	3.4	26.9	3.4	31.8	3.4	26.8	3.4	25.7	3.4	25.6	3.4	21.1	3.4	23.4	3.4	32.3	3.4	21.6	3.4	21.6	3.4	21.4	3.4	21.4	3.4	19.4	3.4	19.4
5.6	4.2	5.6	14.0	5.6	13.5	5.6	11.3	5.6	20.6	5.6	19.5	5.6	20.6	5.6	20.6	5.6	19.9	5.6	21.8	5.6	21.8	5.6	21.8	5.6	21.8	5.6	21.8	5.6	21.8
7.9	20.8	7.9	18.5	7.9	13.6	7.9	11.7	7.9	22.7	7.9	24.3	7.9	26.1	7.9	27.9	7.9	26.7	7.9	26.2	7.9	26.2	7.9	26.8	7.9	26.8	7.9	26.8	7.9	26.8
10-12	4.2	10-12	1.5	10-12	13.6	10-12	8.2	10-12	6.1	10-12	9.3	10-12	10.7	10-12	7.9	10-12	12.2	10-12	12.2	10-12	12.2	10-12	11.0	10-12	11.0	10-12	11.0	10-12	
13.3	4.2	13.3	0.0	13.3	0.0	13.3	0.0	13.3	2.2	13.3	1.8	13.3	4.3	13.3	3.2	13.3	4.8	13.3	6.7	13.3	6.7	13.3	4.2	13.3	4.2	13.3	4.2	13.3	
Ne	24	Ne	5.8	Ne	2.2	Ne	9.7	Ne	7.9	Ne	5.8	Ne	7.8	Ne	4.4	Ne	1.8	Ne	3.6	Ne	3.6	Ne	3.6	Ne	3.6	Ne	3.6	Ne	
3.2	23.8	3.2	41.0	3.2	22.0	3.2	20.1	3.2	19.9	3.2	14.9	3.2	18.7	3.2	11.5	3.2	15.4	3.2	15.1	3.2	15.1	3.2	15.1	3.2	15.1	3.2	15.1	3.2	15.1
3.4	31.1	3.4	28.1	3.4	28.6	3.4	28.2	3.4	27.6	3.4	24.5	3.4	23.2	3.4	25.3	3.4	26.1	3.4	26.1	3.4	26.1	3.4	26.1	3.4	26.1	3.4	26.1	3.4	26.1
5.6	18.9	5.6	12.1	5.6	19.2	5.6	18.4	5.6	18.7	5.6	17.0	5.6	18.5	5.6	20.4	5.6	21.1	5.6	21.9	5.6	21.9	5.6	21.9	5.6	21.9	5.6	21.9	5.6	21.9
7.9	20.6	7.9	10.5	7.9	10.5	7.9	10.5	7.9	24.5	7.9	25.5	7.9	23.0	7.9	25.7	7.9	22.6	7.9	23.7	7.9	23.7	7.9	23.7	7.9	23.7	7.9	23.7	7.9	23.7
10-12	4.4	10-12	7.2	10-12	9.0	10-12	8.9	10-12	10.2	10-12	10.0	10-12	10.3	10-12	11.4	10-12	10.3	10-12	10.3	10-12	10.3	10-12	11.0	10-12	11.0	10-12	11.0	10-12	
13.3	2.2	13.3	7.2	13.3	4.4	13.3	4.3	13.3	1.3	13.3	4.3	13.3	1.3	13.3	4.3	13.3	1.3	13.3	4.3	13.3	4.3	13.3	4.2	13.3	4.2	13.3	4.2	13.3	
Ne	36	Ne	4.2	Ne	3.8	Ne	5.8	Ne	6.3	Ne	4.9	Ne	6.4	Ne	4.3	Ne	4.3	Ne	4.3	Ne	4.3	Ne	4.3	Ne	4.3	Ne	4.3	Ne	
3.2	36.4	3.2	31.7	3.2	25.5	3.2	21.9	3.2	21.5	3.2	18.6	3.2	12.9	3.2	15.8	3.2	12.1	3.2	12.1	3.2	12.1	3.2	12.1	3.2	12.1	3.2	12.1	3.2	12.1
3.4	24.7	3.4	20.7	3.4	26.7	3.4	26.0	3.4	26.0	3.4	23.8	3.4	19.8	3.4	21.3	3.4	19.2	3.4	19.2	3.4	19.2	3.4	19.2	3.4	19.2	3.4	19.2	3.4	19.2
5.6	14.7	5.6	14.3	5.6	18.6	5.6	18.0	5.6	16.4	5.6	18.1	5.6	16.4	5.6	17.3	5.6	16.3	5.6	16.3	5.6	16.3	5.6	16.3	5.6	16.3	5.6	16.3	5.6	16.3
7.9	20.7	7.9	17.8	7.9	16.2	7.9	11.5	7.9	23.9	7.9	24.1	7.9	24.6	7.9	28.7	7.9	28.0	7.9	28.0	7.9	28.0	7.9	28.0	7.9	28.0	7.9	28.0	7.9	28.0
10-12	4.6	10-12	6.5	10-12	1.9	10-12	8.2	10-12	8.4	10-12	9.9	10-12	10.1	10-12	9.4	10-12	12.7	10-12	12.7	10-12	12.7	10-12	12.7	10-12	12.7	10-12	12.7	10-12	
13.3	1.3	13.3	1.4	13.3	1.2	13.3	3.7	13.3	4.8	13.3	4.7	13.3	4.3	13.3	4.3	13.3	4.3	13.3	4.3	13.3	4.3	13.3	4.2	13.3	4.2	13.3	4.2	13.3	
Ne	17.6	Ne	8.8	Ne	7.8	Ne	4.9	Ne	4.0	Ne	6.0	Ne	4.4	Ne	3.4	Ne	3.4	Ne	3.4	Ne	3.4	Ne	3.4	Ne	3.4	Ne	3.4	Ne	
3.2	37.7	3.2	32.2	3.2	19.3	3.2	17.9	3.2	17.9	3.2	15.9	3.2	12.4	3.2	13.4	3.2	12.1	3.2	12.1	3.2	12.1	3.2	12.1	3.2	12.1	3.2	12.1	3.2	12.1
3.4	21.1	3.4	20.1	3.4	20.2	3.4	20.9	3.4	21.0	3.4	20.4	3.4	23.2	3.4	23.4	3.4	23.2	3.4	23.2	3.4	23.2	3.4	23.2	3.4	23.2	3.4	23.2	3.4	23.2
5.6	16.9	5.6	16.3	5.6	18.1	5.6	18.1	5.6	18.1	5.6	18.1	5.6	18.1	5.6	18.1	5.6	18.1	5.6	18.1	5.6	18.1	5.6	18.1	5.6	18.1	5.6	18.1	5.6	18.1
7.9	21.1	7.9	19.8	7.9	16.9	7.9	12.7	7.9	25.0	7.9	25.8	7.9	21.7	7.9	23.9	7.9	23.3	7.9	23.3	7.9	23.3	7.9	23.3	7.9	23.3	7.9	23.3	7.9	23.3
10-12	4.7	10-12	10.2	10-12	8.9	10-12	10.1	10-12	9.9	10-12	10.7	10-12	10.7	10-12	10.7	10-12	10.7	10-12	10.7	10-12	10.7	10-12	10.7	10-12	10.7	10-12	10.7	10-12	
13.3	4.4	13.3	3.7	13.3	4.4	13.3	7.0	13.3	6.4	13.3	6.4	13.3	6.4	13.3	6.4	13.3	6.4	13.3	6.4	13.3	6.4	13.3	4.2	13.3	4.2	13.3	4.2	13.3	
Ne	19.4	Ne	10.7	Ne	7.0	Ne	6.6	Ne	6.6	Ne	6.6	Ne	6.6	Ne	6.6	Ne	6.6	Ne	6.6	Ne	6.6	Ne	6.6	Ne	6.6	Ne	6.6	Ne	
3.2	42.1	3.2	37.7	3.2	36.0	3.2	36.9	3.2	33.1	3.2	33.1	3.2	31.9	3.2	31.9	3.2	31.9	3.2	31.9	3.2	31.9	3.2	31.9	3.2	31.9	3.2	31.9	3.2	31.9
3.4	21.1	3.4	21.7	3.4	21.3	3.4	18.5	3.4	21.2	3.4	19.3	3.4	19.3	3.4	19.3	3.4	19.3	3.4	19.3	3.4	19.3	3.4	19.3	3.4	19.3	3.4	19.3	3.4	19.3
5.6	14.7	5.6	14.7	5.6	18.6	5.6	18.6	5.6	18.6	5.6	18.6	5.6	18.6	5.6	18.6	5.6	18.6	5.6	18.6	5.6	18.6	5.6	18.6	5.6	18.6	5.6	18.6	5.6	18.6
7.9	20.7	7.9	20.4	7.9	20.9	7.9	20.9	7.9	20.9	7.9	20.9	7.9	20.9	7.9	20.9	7.9	20.9	7.9	20.9	7.9	20.9	7.9	20.9	7.9	20.9	7.9	20.9	7.9	20.9
10-12	4.7	10-12	10.2	10-12	10.2	10-12	10.2	10-12	10.2	10-12	10.2	10-12	10.2	10-12	10.2	10-12	10.2	10-12	10.2	10-12	10.2	10-12	10.2	10-12	10.2	10-12	10.2	10-12	
13.3	4.6	13.3	4.7	13.3	4.7	13.3	8.1	13.3	1.2	13.3	1.2	13.3	1.2	13.3	1.2	13.3	1.2	13.3	1.2	13.3	1.2	13.3	4.2	13.3	4.2	13.3	4.2	13.3	
Ne	19.4	Ne	10.7	Ne	7.0	Ne	6.6	Ne	6.6	Ne	6.6	Ne	6.6	Ne	6.6	Ne	6.6	Ne	6.6	Ne	6.6	Ne	6.6	Ne	6.6	Ne	6.6	Ne	
3.2	48.7	3.2	44.9	3.2	43.4	3.2	43.4	3.2	40.4	3.2	40.4	3.2	38.9	3.2	38.9	3.2	38.9	3.2	38.9	3.2	38.9	3.2	38.9	3.2	38.9	3.2	38.9	3.2	38.9
3.4	24.9	3.4	24.9	3.4	24.9	3.4	24.9	3.4	24.9	3.4	24.9	3.4	24.9	3.4	24.9	3.4	24.9	3.4	24.9	3.4	24.9	3.4	24.9	3.4	24.9	3.4	24.9	3.4	24.9
5.6	11.1	5.6	11.1	5.6	11.1	5.6	11.1	5.6	11.1	5.6	11.1	5.6	11.1	5.6	11.1	5.6	11.1	5.6	11.1	5.6	11.1	5.6	11.1	5.6	11.1	5.6	11.1	5.6	11.1
7.9	20.7	7.9	20.7	7.9	20.7	7.9	20.7	7.9	20.7	7.9	20.7	7.9	20.7	7.9	20.7	7.9	20.7	7.9	20.7	7.9	20.7	7.9	20.7	7.9	20.7	7.9	20.7	7.9	20.7
10-12	4.8	10-12	10.2	10-12	10.2	10-12	10.2	10-12	10.2	10-12	10.2	10-12	10.2	10-12	10.2	10-12	10.2	10-12	10.2	10-12	10.2	10-12	10.2	10-12	10.2	10-12	10.2	10-12	
13.3	4.8	13.3	4.8	13.3	4.8	13.3	8.1	13.3	1.2	13.3	1.2	13.3	1.2	13.3	1.2	13.3	1.2	13.3	1.2	13.3	1.2	13.3	4.2	13.3	4.2	13.3	4.2	13.3	
Ne	19.4	Ne	10.7	Ne	7.0	Ne	6.6	Ne	6.6	Ne	6.6	Ne	6.6	Ne	6.6	Ne	6.6	Ne	6.6	Ne	6.6	Ne	6.6	Ne	6.6	Ne	6.6	Ne	
3.2	54.9	3.2	51.1	3.2	49.6	3.2	49.6	3.2	46.6	3.2	46.6	3.2	45.1	3.2	45.1	3.2	45.1	3.2	45.1	3.2	45.1	3.2	45.1	3.2	45.1	3.2	45.1	3.2	45.1
3.4	26.9	3.4	26.9	3.4	26.9	3.4	26.9	3.4	26.9	3.4	26.9	3.4	26.9	3.4	26.9	3.4	26.9	3.4	26.9	3.4	26.9	3.4	26.9	3.4	26.9	3.4	26.9	3.4	26.9
5.6	11.1	5.6	11.1	5.6	11.1	5.6	11.1	5.6	11.1	5.6	11.1	5.6	11.1	5.6	11.1	5.6	11.1	5.6	11.1	5.6	11.1	5.6	11.1	5.6	11.1	5.6	11.1	5.6	11.1
7.9	20.7	7.9	20.7	7.9	20.7	7.9	20.7	7.9	20.7	7.9	20.7	7.9	20.7	7.9	20.7	7.9	20.7	7.9	20.7	7.9	20.7	7.9	20.7	7.9	20.7	7.9	20.7	7.9	20.7
10-12	4.8	10-12	10.2	10-12	10.2	10-12	10.2	10-12	10.2	10-12	10.2	10-12	10.2	10-12	10.2	10-12	10.2	10-12	10.2	10-12	10.2	10-12	10.2	10-12	10.2	10-12	10.2	10-12	
13.3	4.8	13.3	4.8	13.3	4.8	13.3	8.1	13.3	1.2	13.3	1.2	13.3	1.2	13.3	1.2	13.3	1.2	13.3	1.2	13.3	1.2	13.3	4.2	13.3	4.2	13.3	4.2	13.3	
Ne	19.4	Ne	10.7	Ne	7.0	Ne	6.6																						

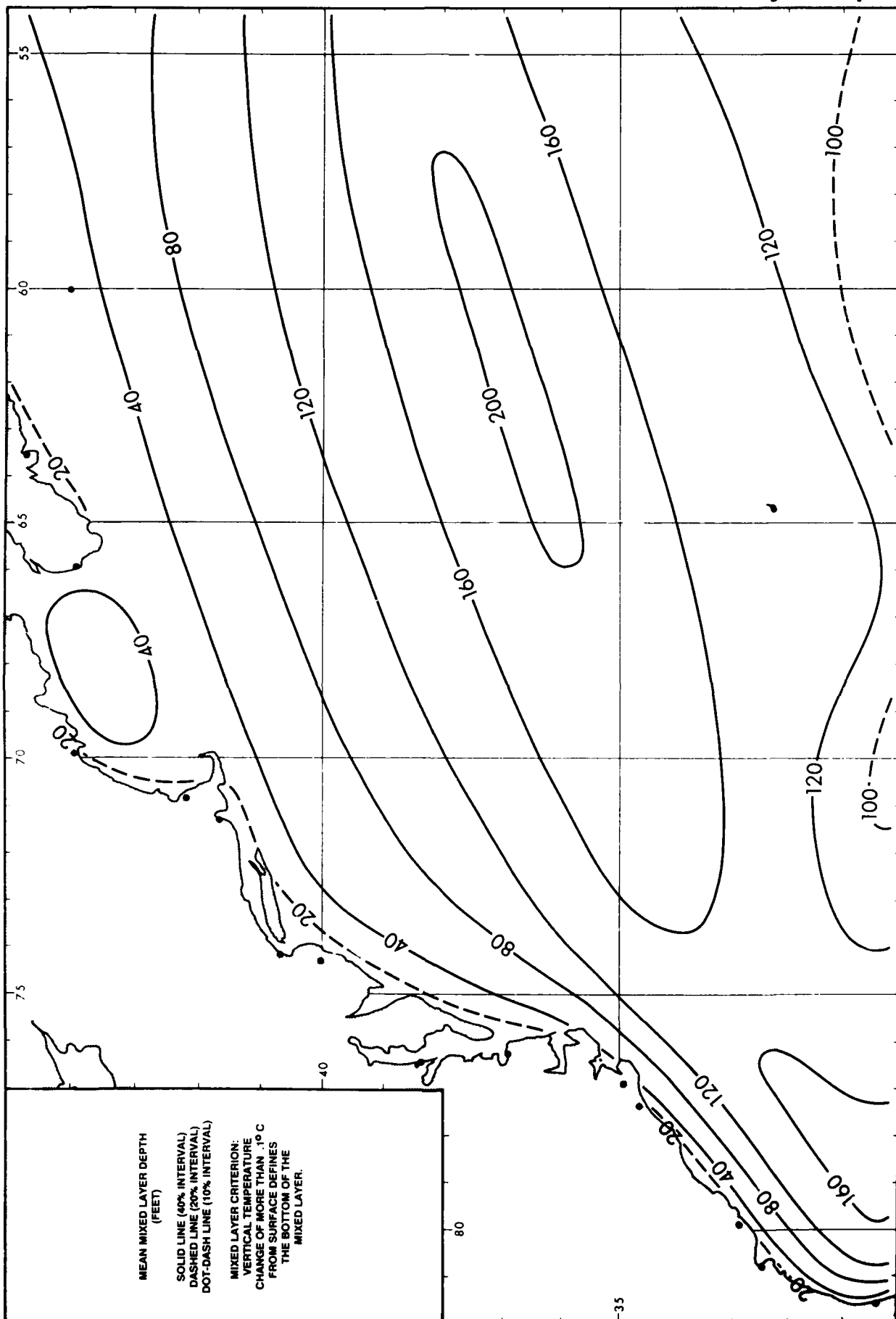
October

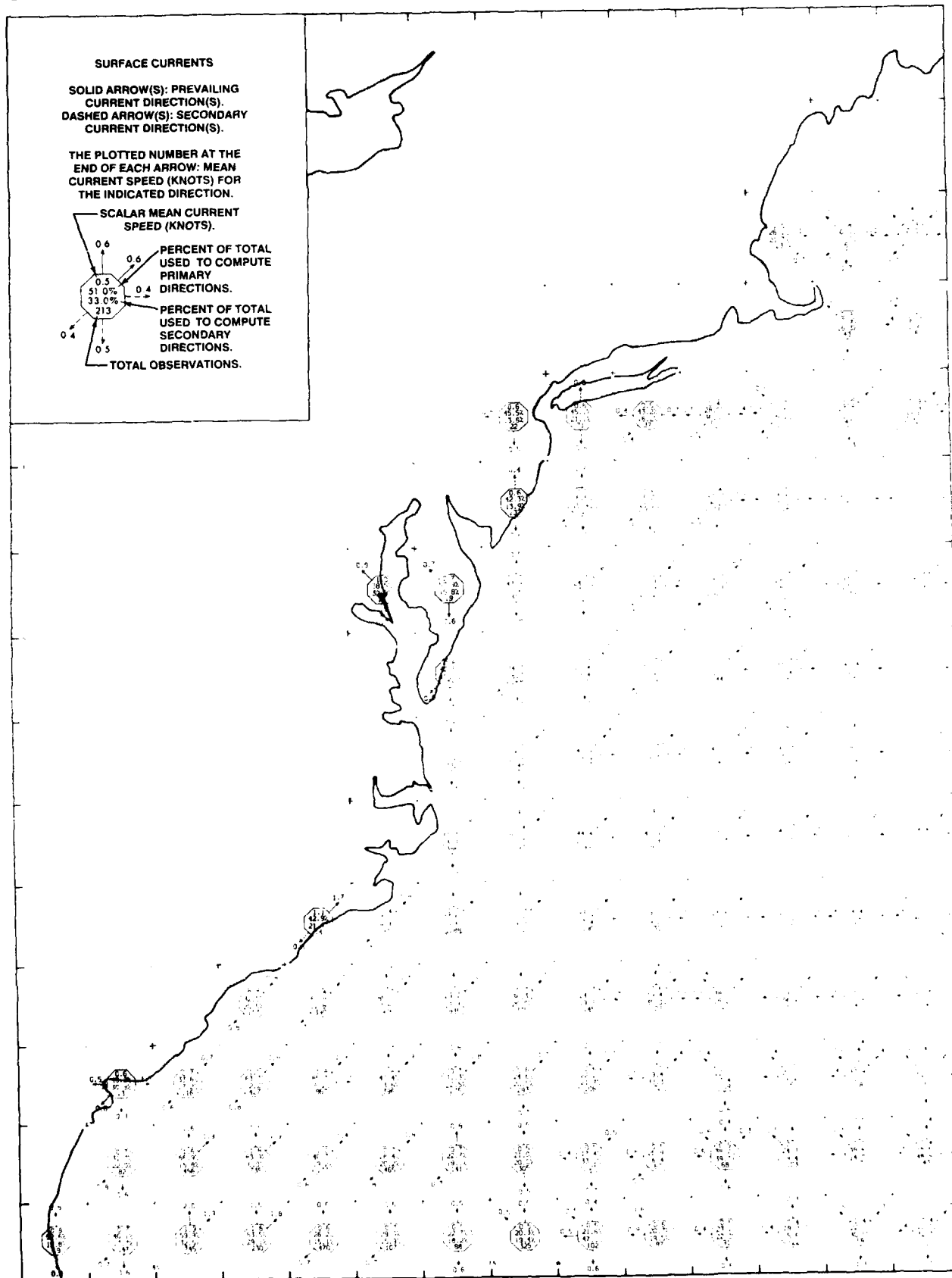
Wave Height



October

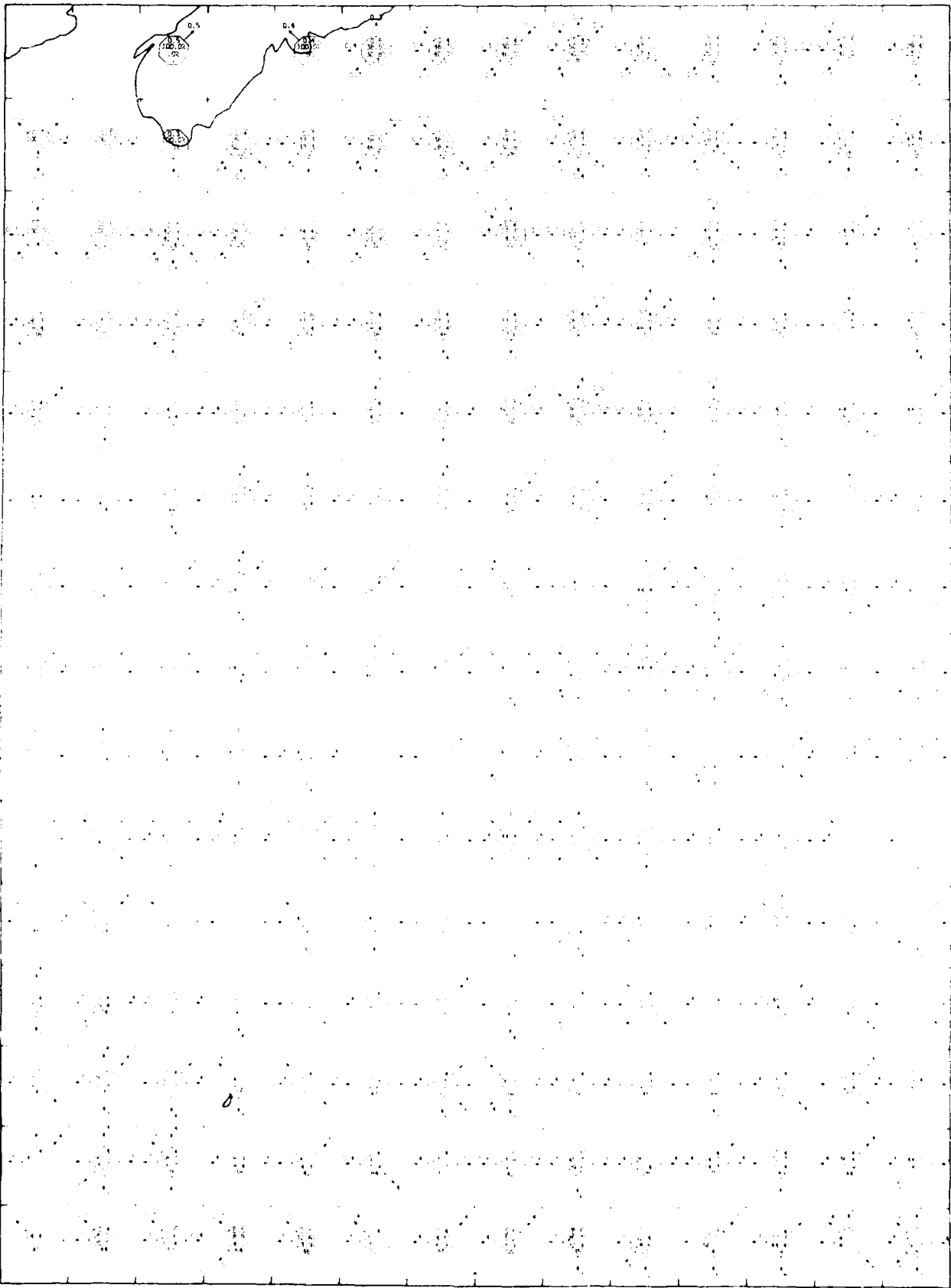
Mean Mixed Layer Depth





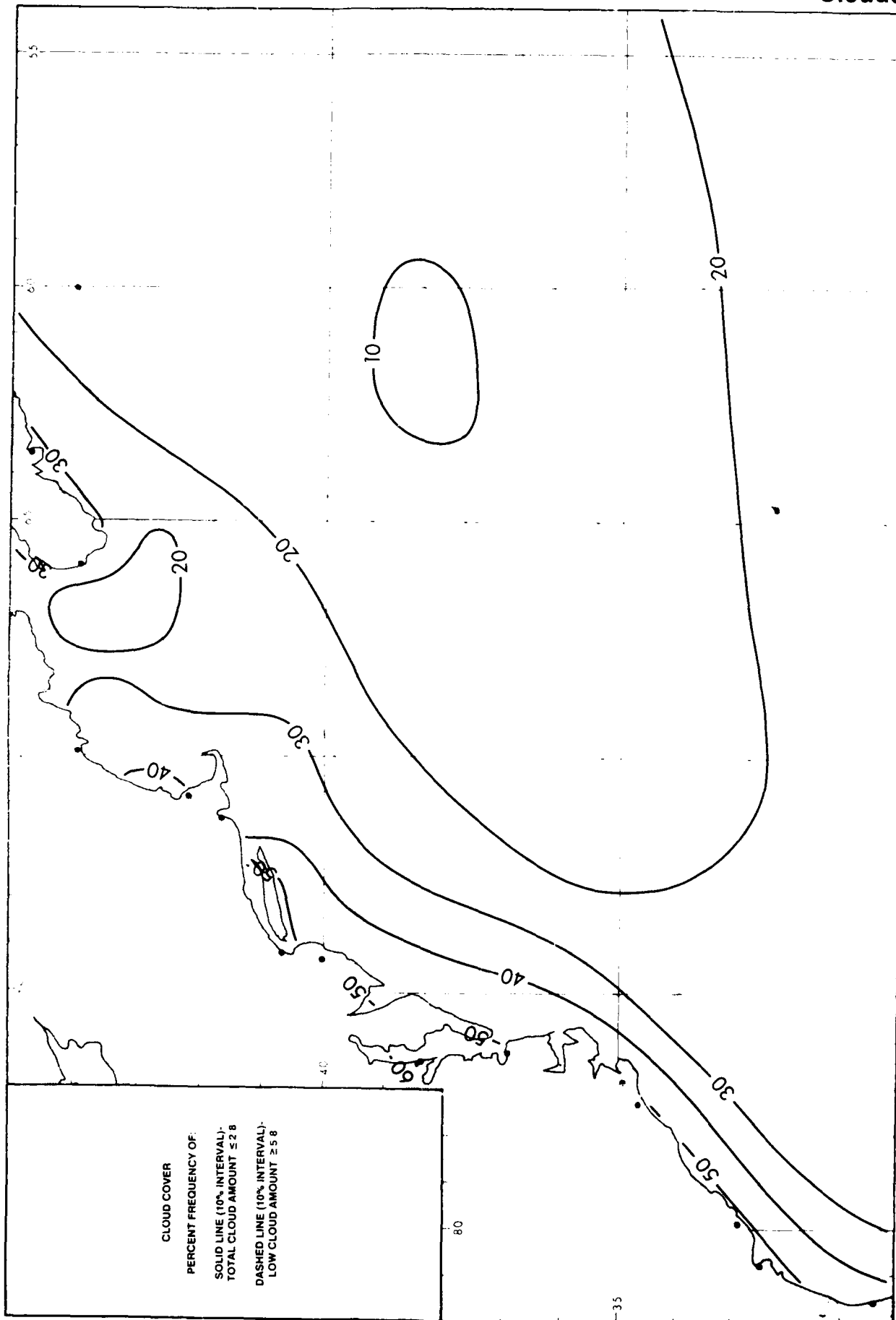
October

Surface Currents



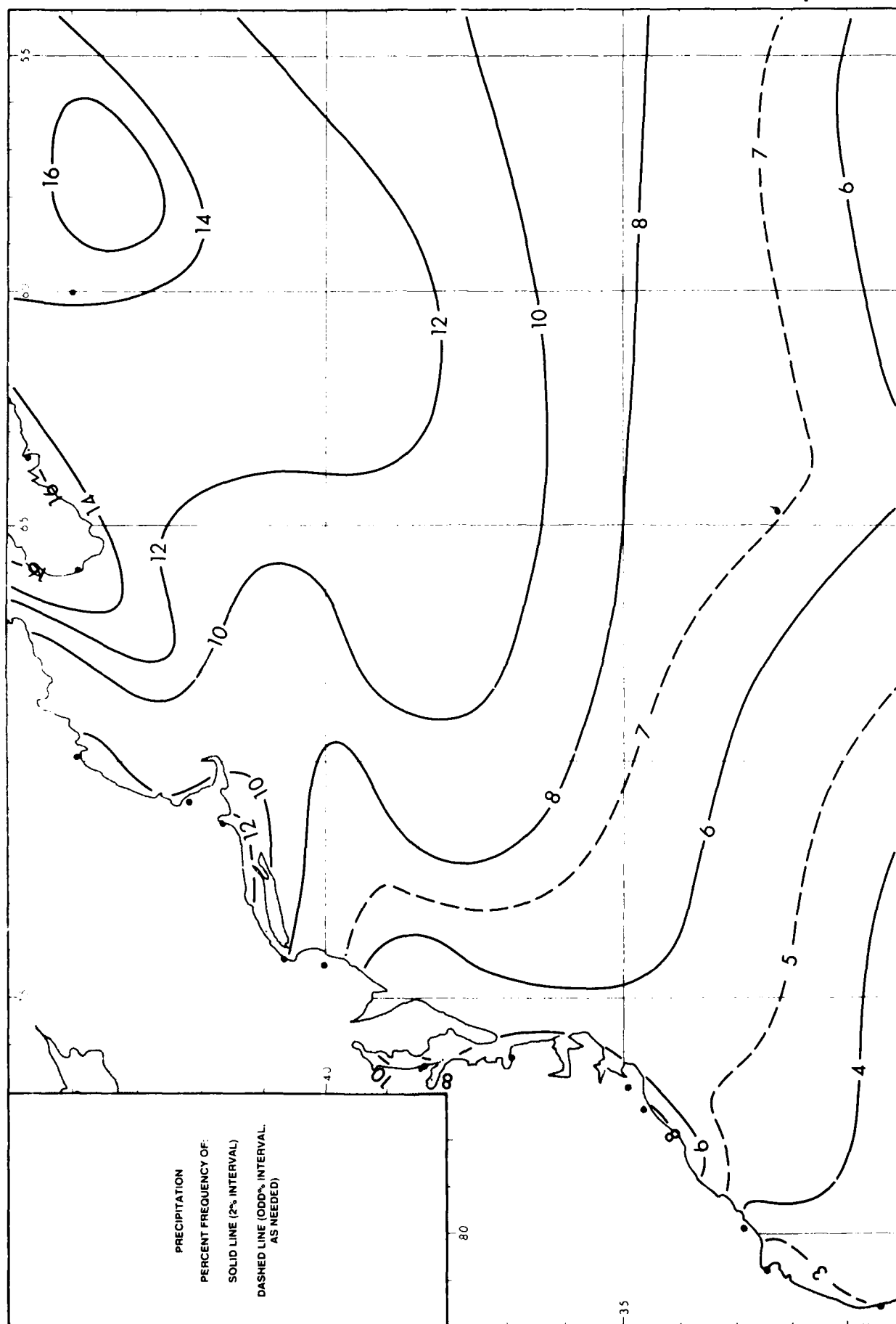
November

Clouds



November

Precipitation



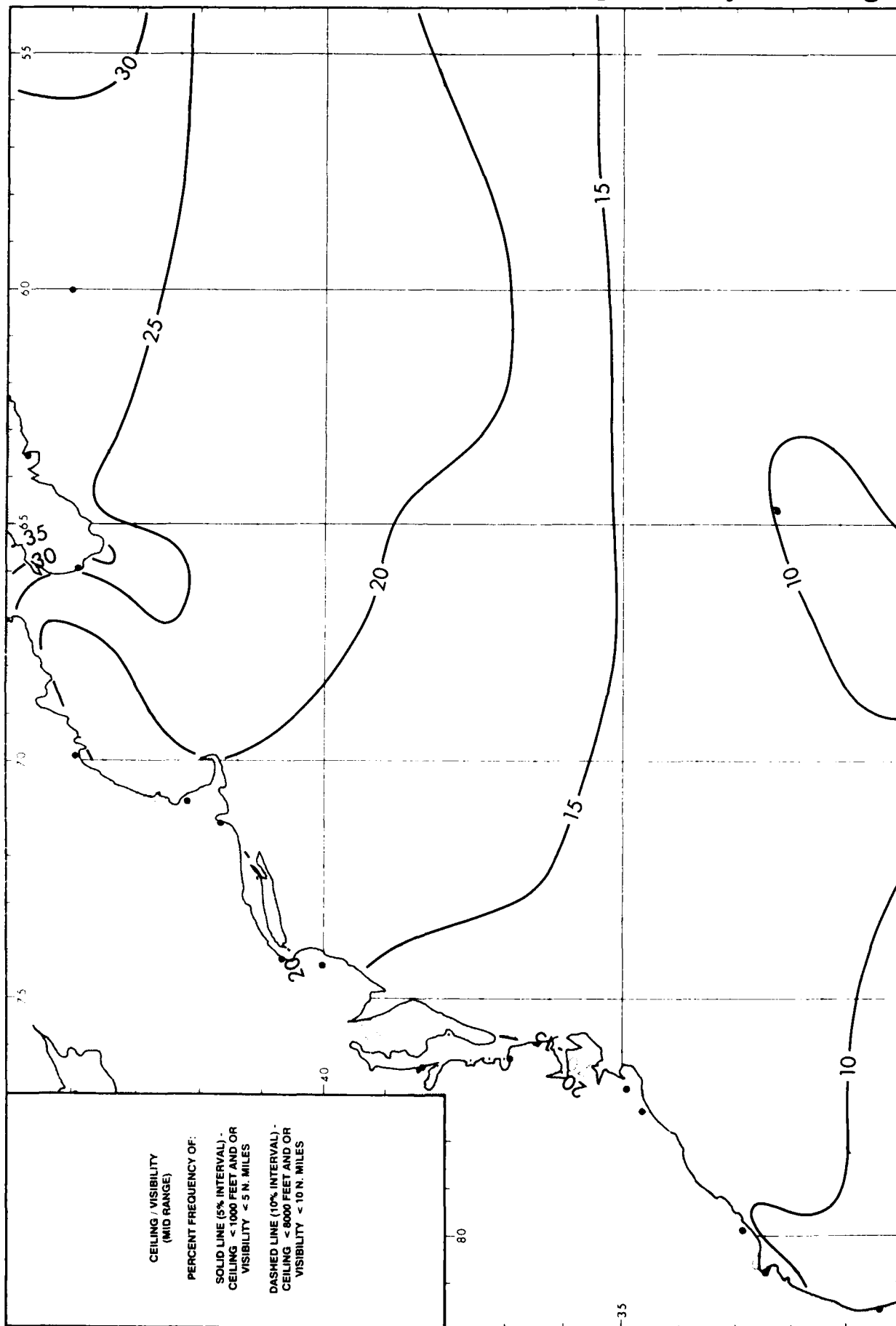
November

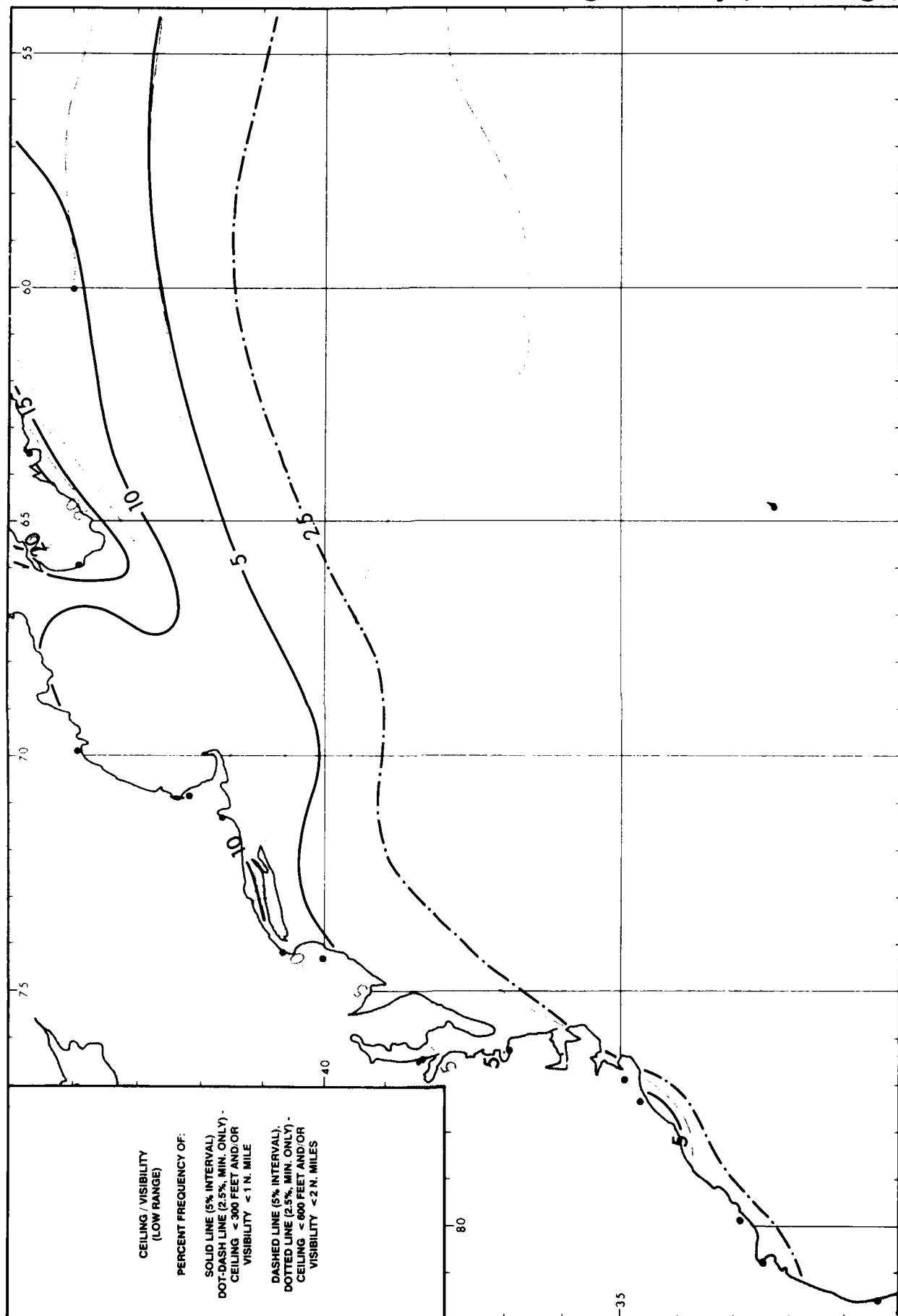
Visibility

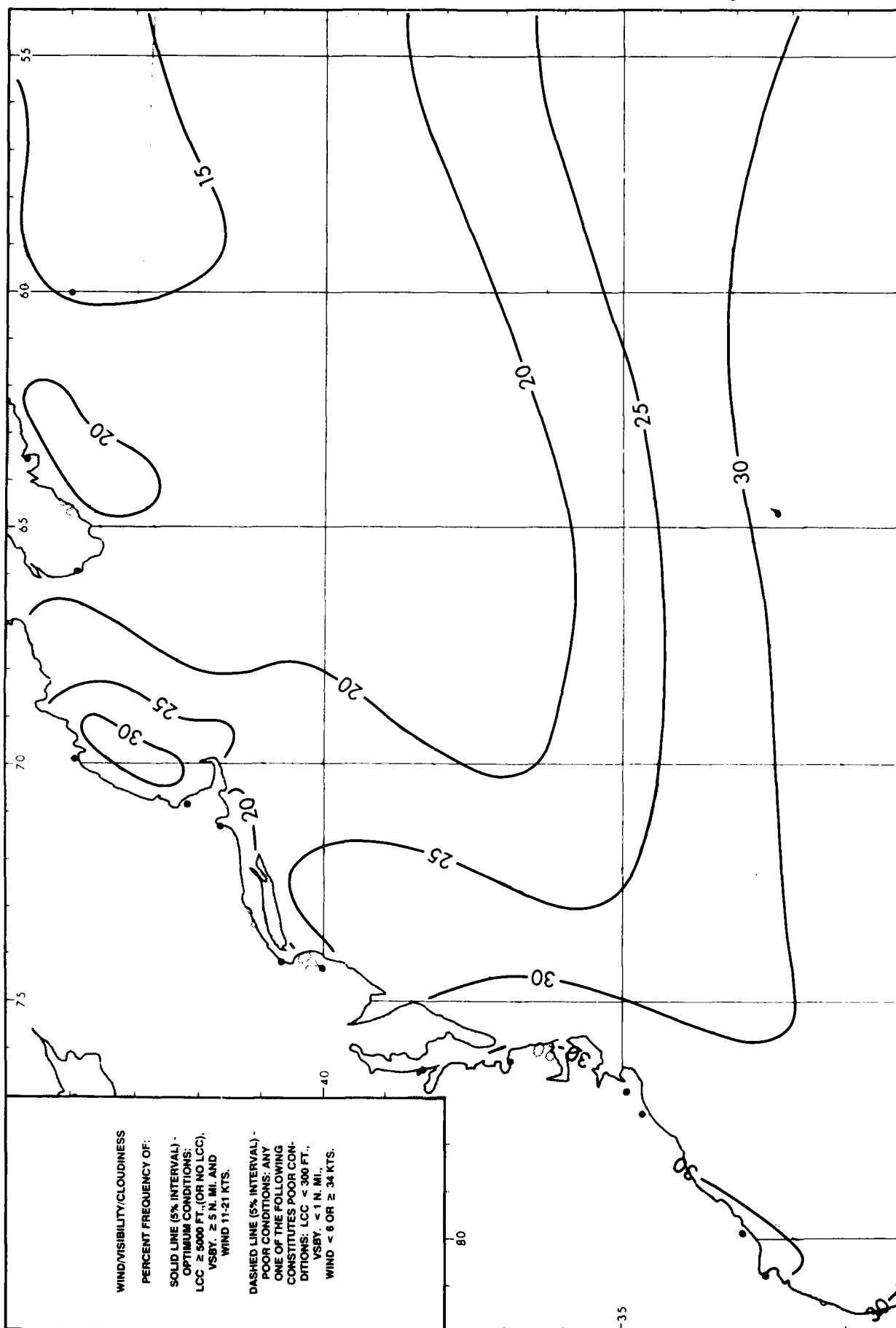
[illegible]

November

Ceiling / Visibility (Mid Range)

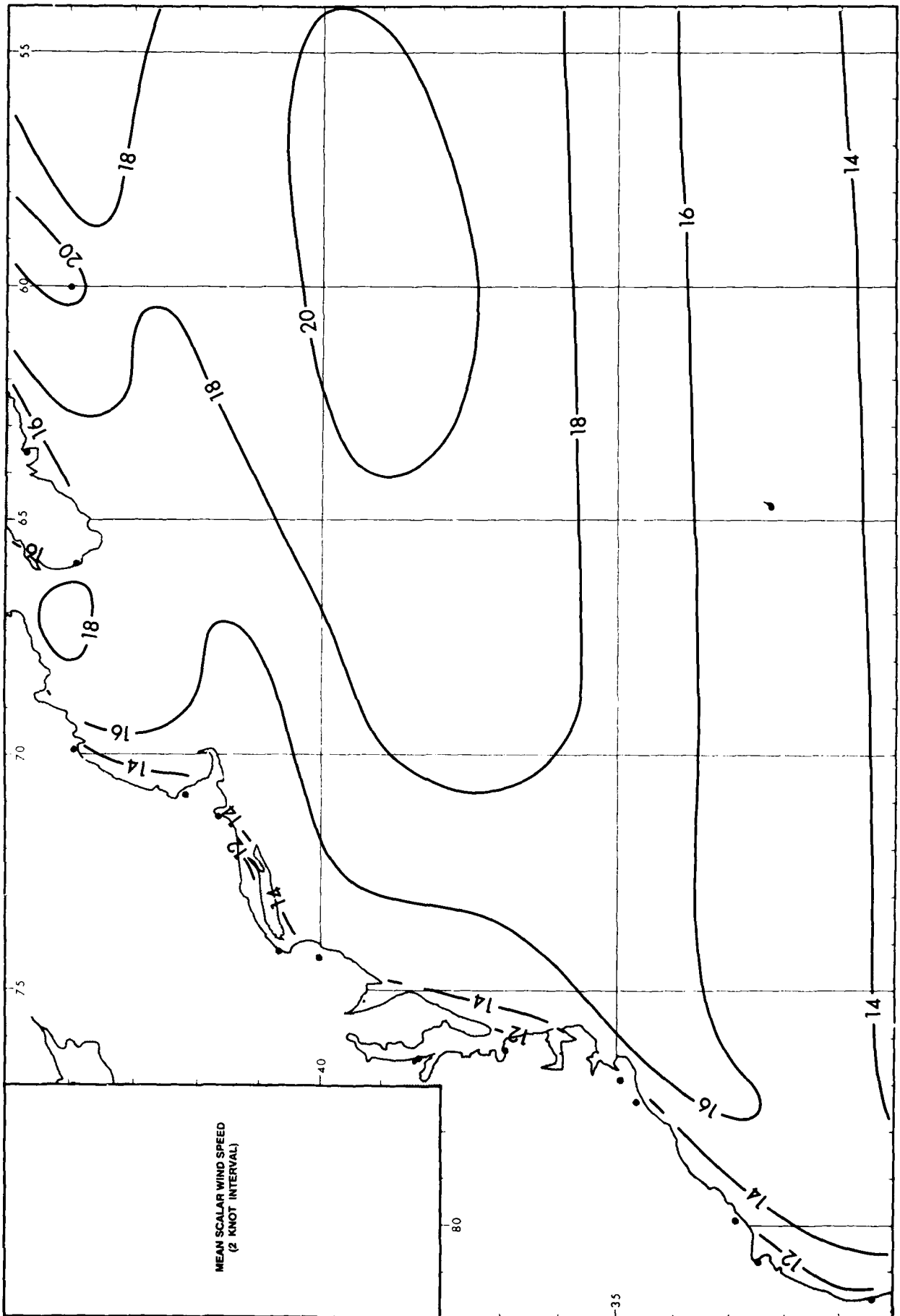






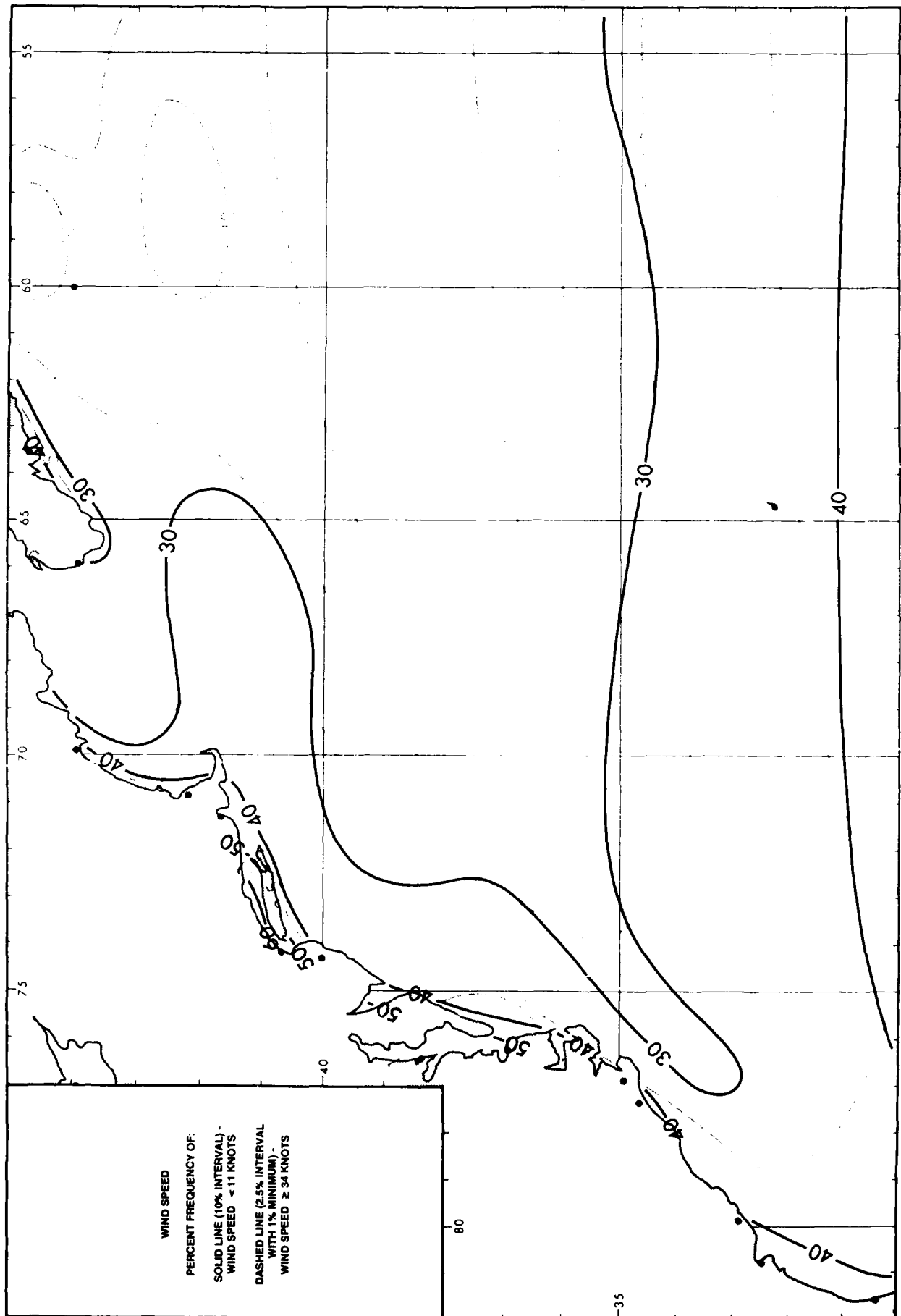
November

Mean Scalar Wind Speed



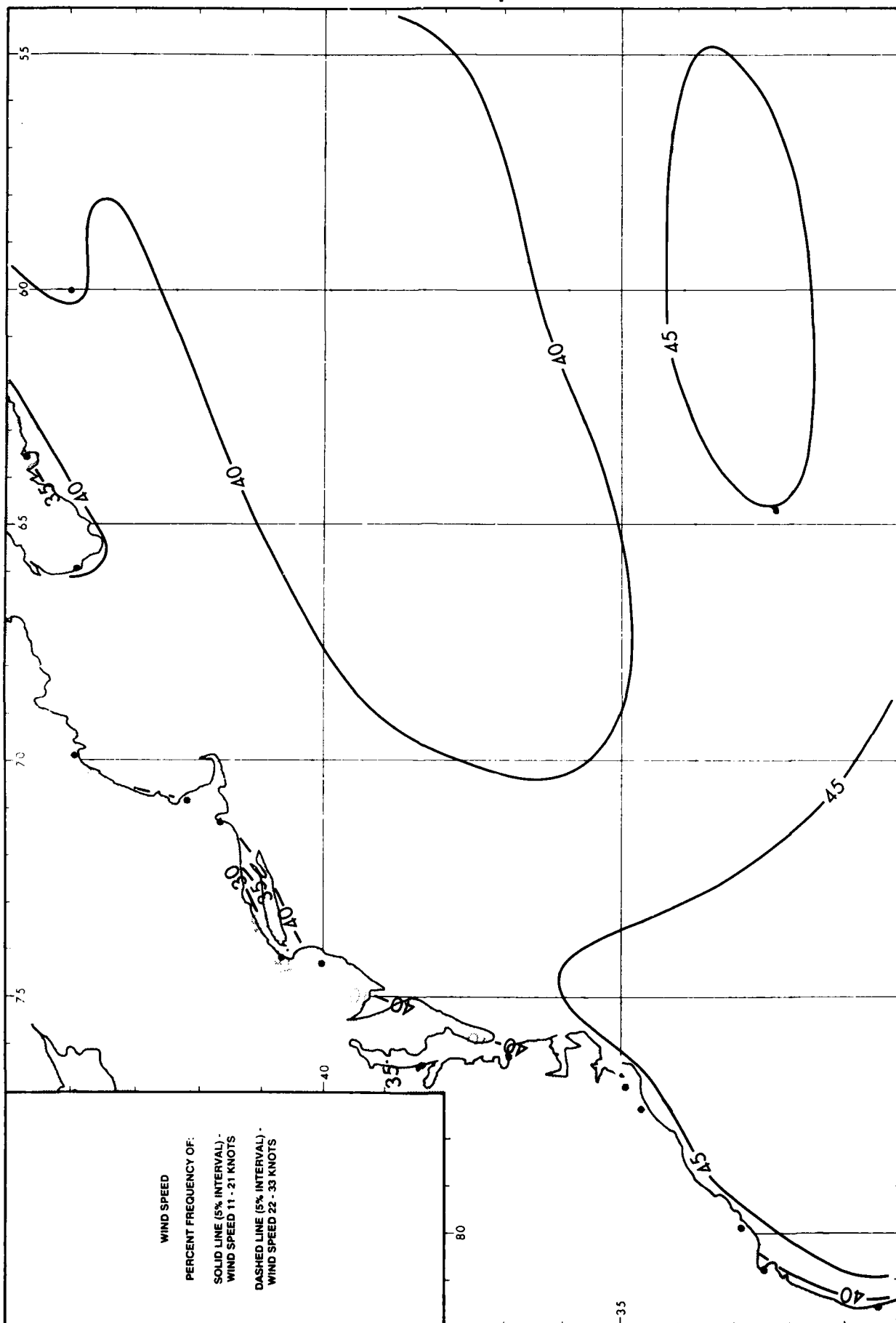
November

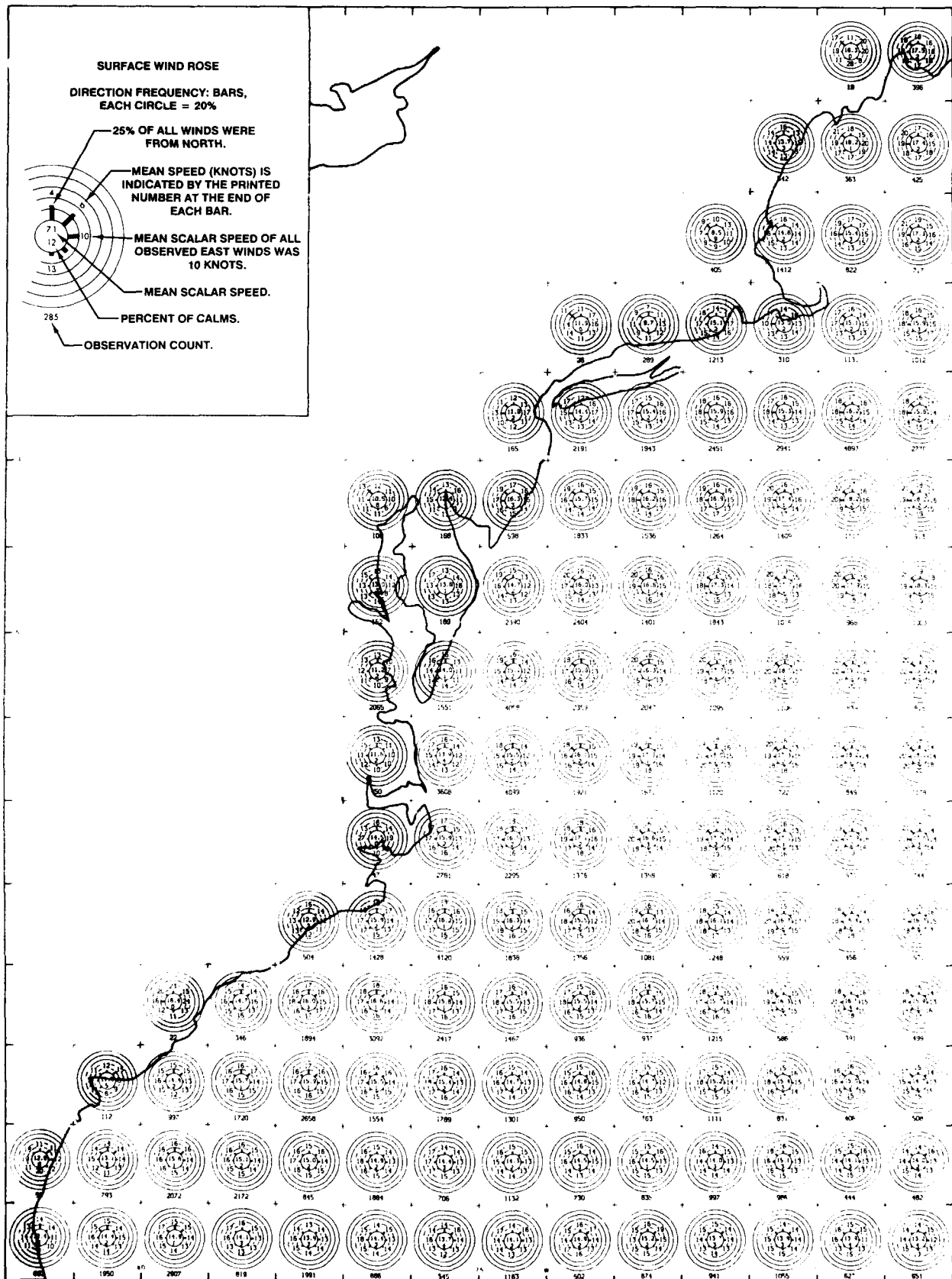
Wind Speed <11 and ≥ 34 Knots

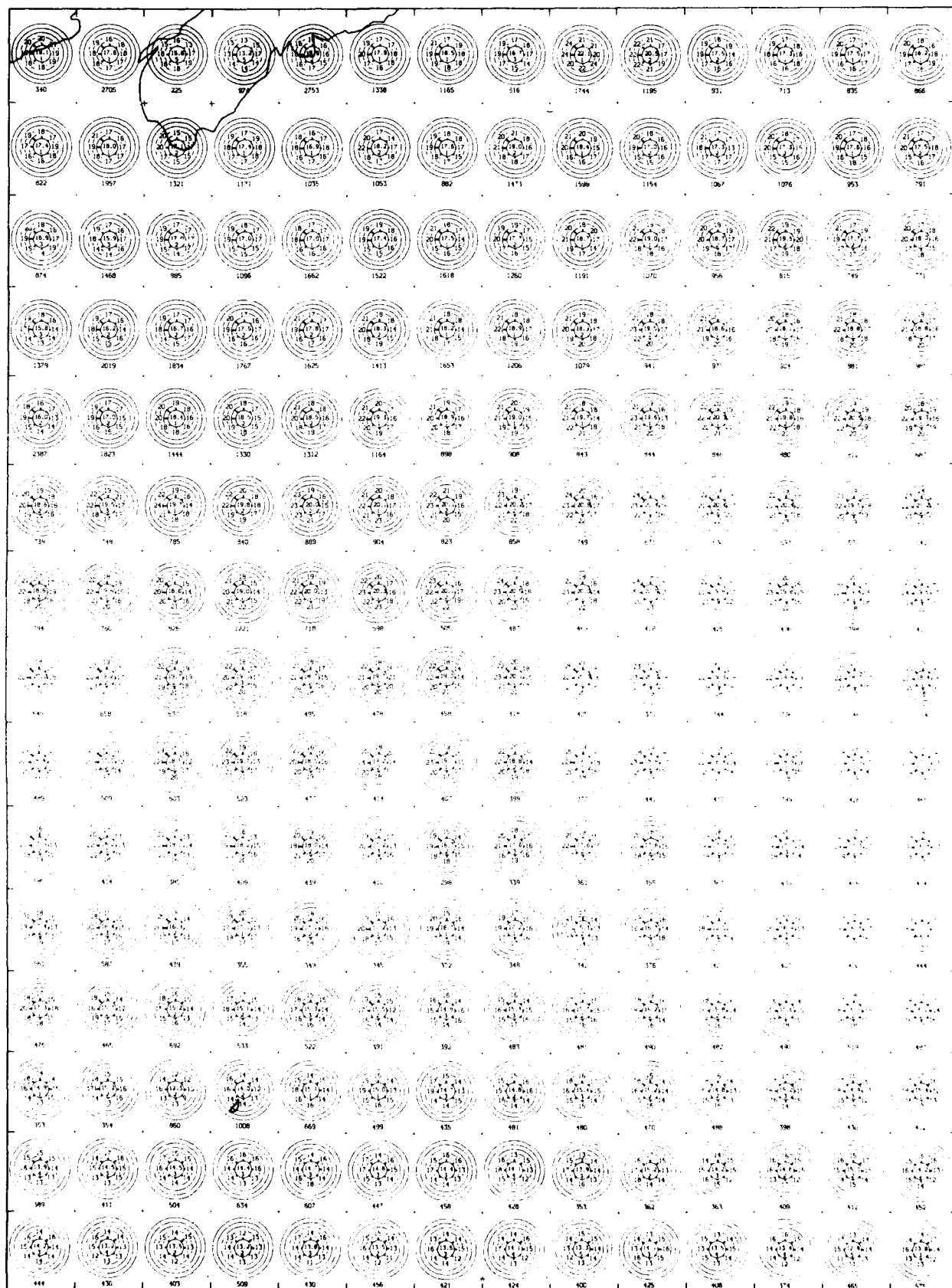


November

Wind Speed 11 - 21 and 22 - 33 Knots

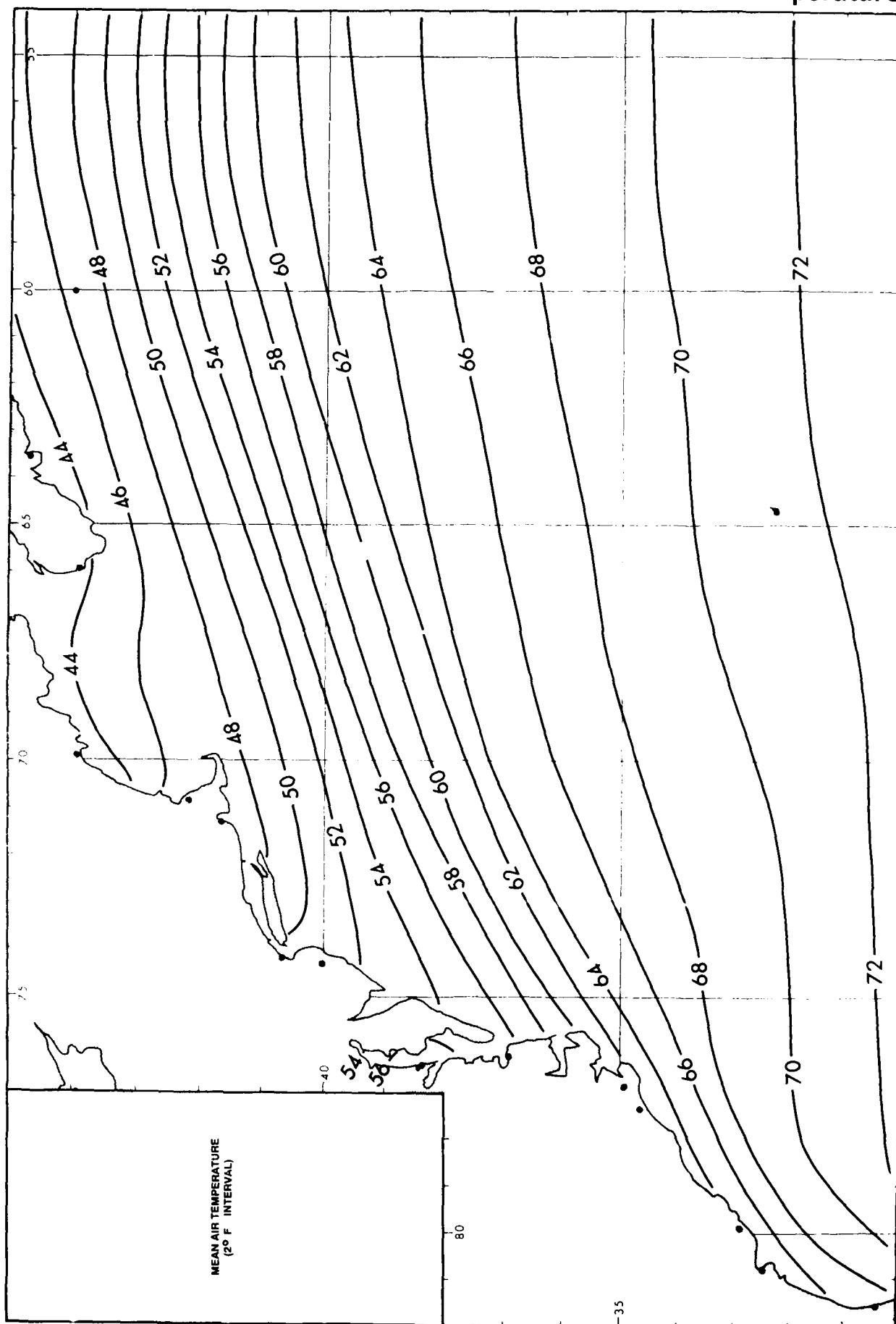






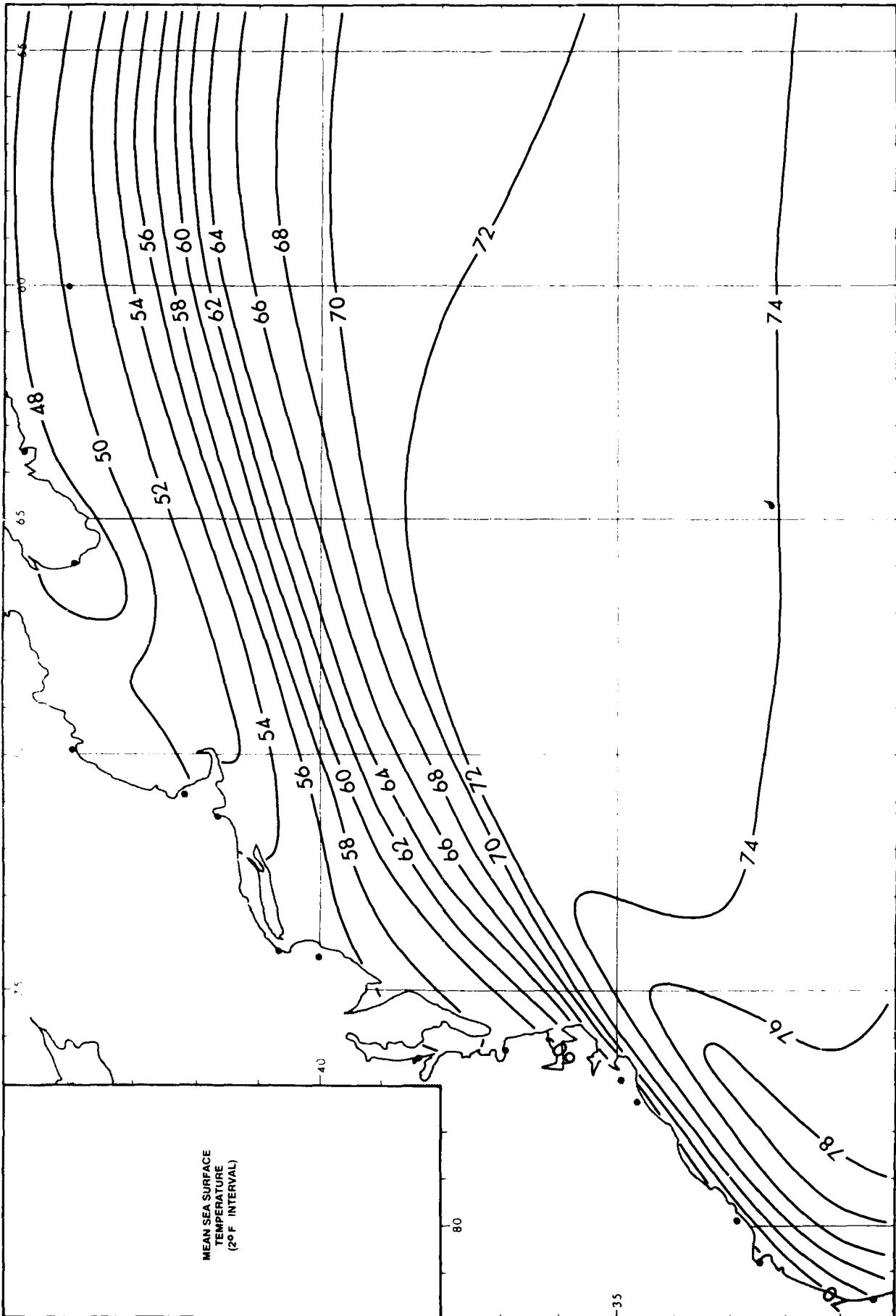
November

Mean Air Temperature



November

Mean Sea Surface Temperature



WAVE HEIGHT - FREQUENCIES

PERCENT FREQUENCY OF VARIOUS
RANGES WITHIN ONE - DEGREE
QUADRANGLES.

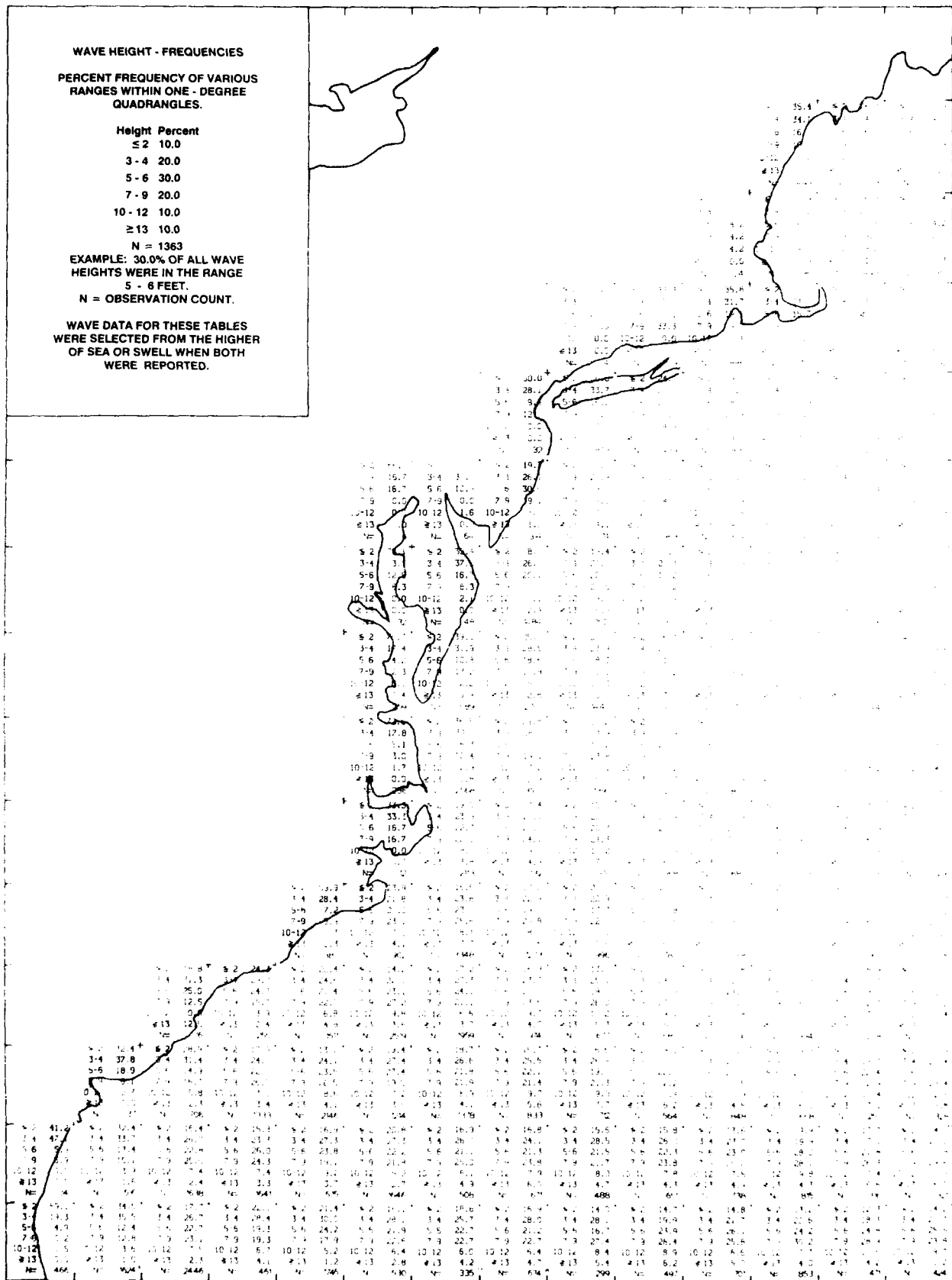
Height	Percent
≤ 2	10.0
3 - 4	20.0
5 - 6	30.0
7 - 9	20.0
10 - 12	10.0
≥ 13	10.0

N = 1363

EXAMPLE: 30.0% OF ALL WAVE
HEIGHTS WERE IN THE RANGE
5 - 6 FEET.

N = OBSERVATION COUNT.

WAVE DATA FOR THESE TABLES
WERE SELECTED FROM THE HIGHER
OF SEA OR SWELL WHEN BOTH
WERE REPORTED.

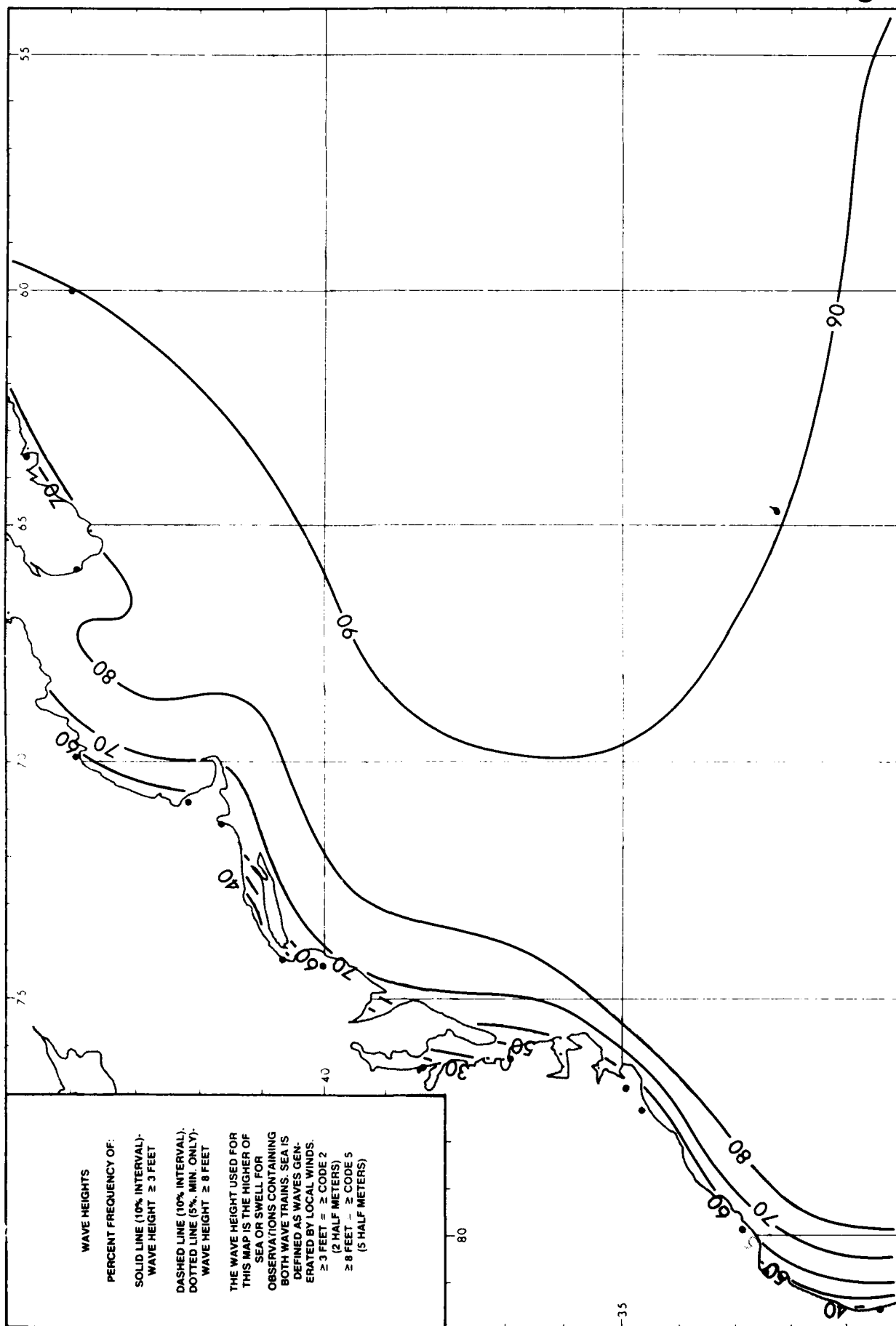


Wave Height

[illegible]

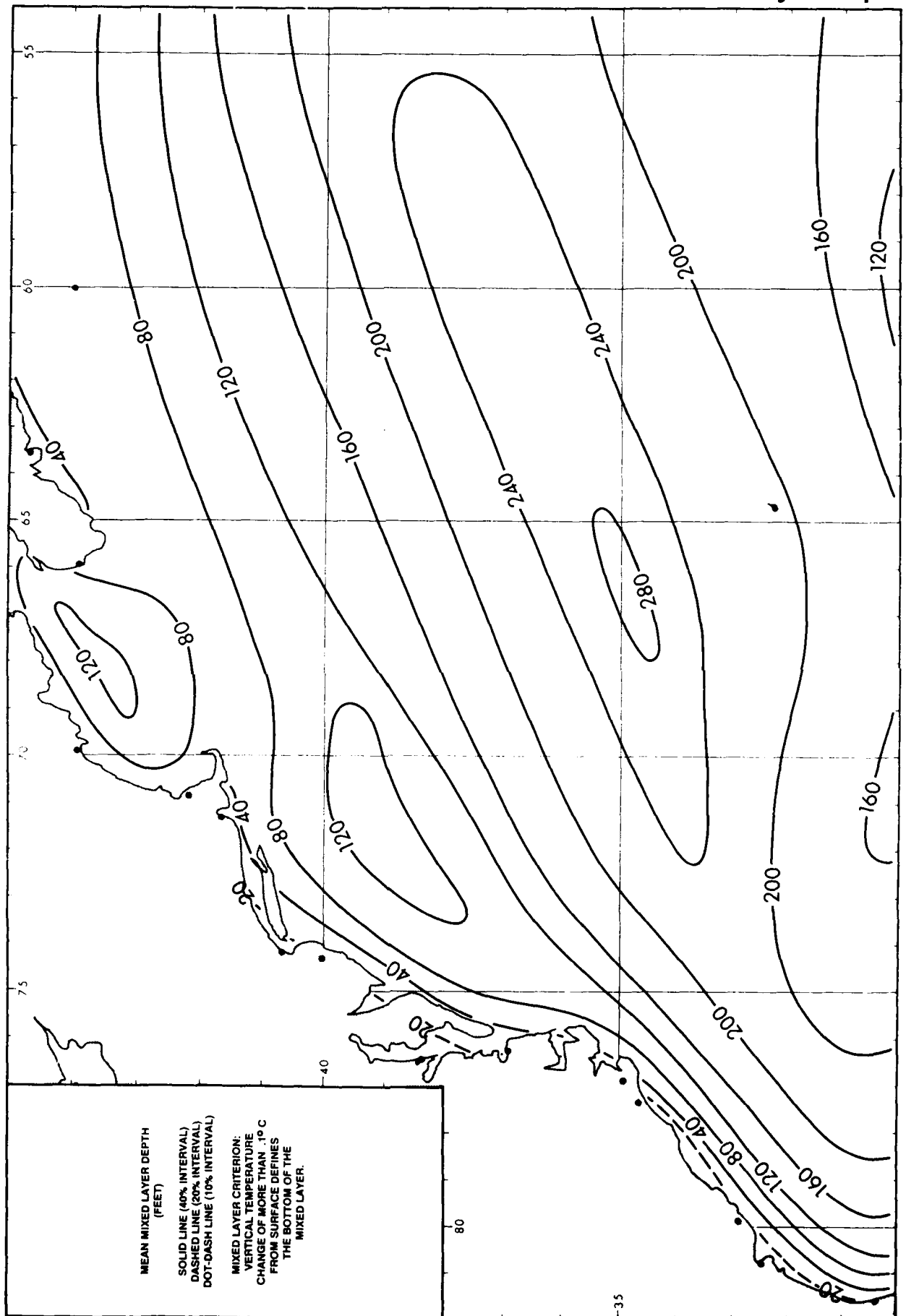
November

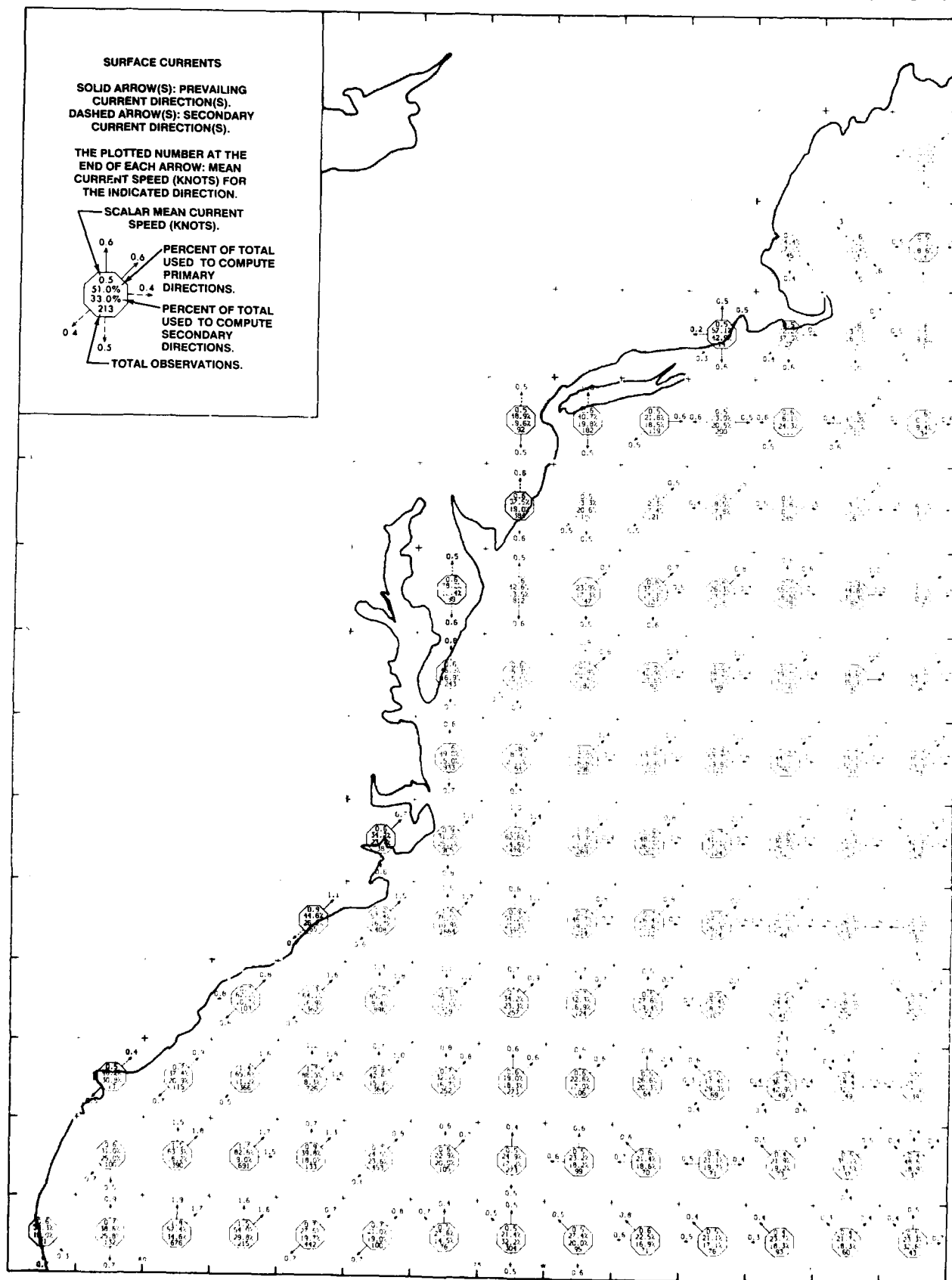
Wave Height

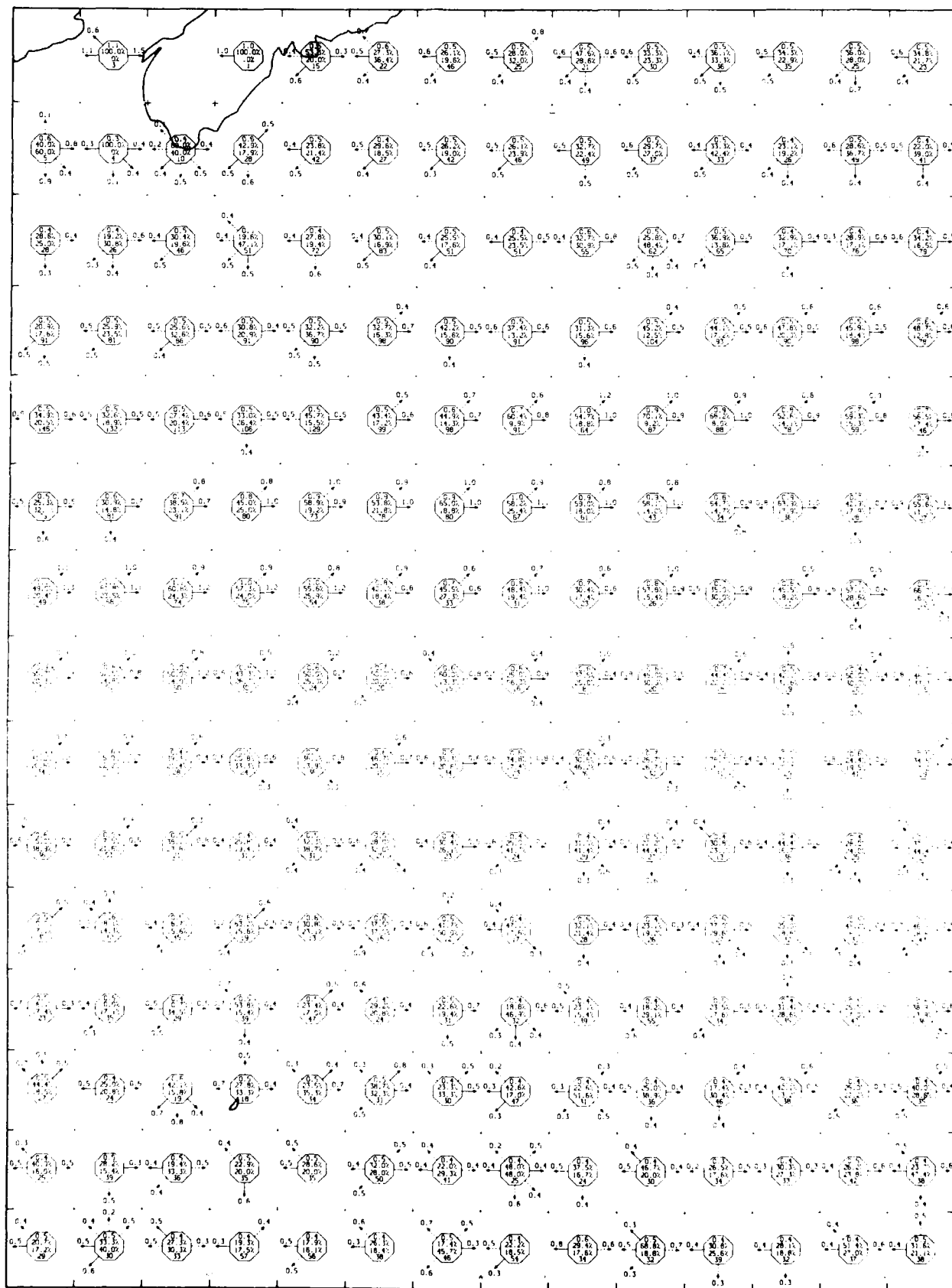


November

Mean Mixed Layer Depth

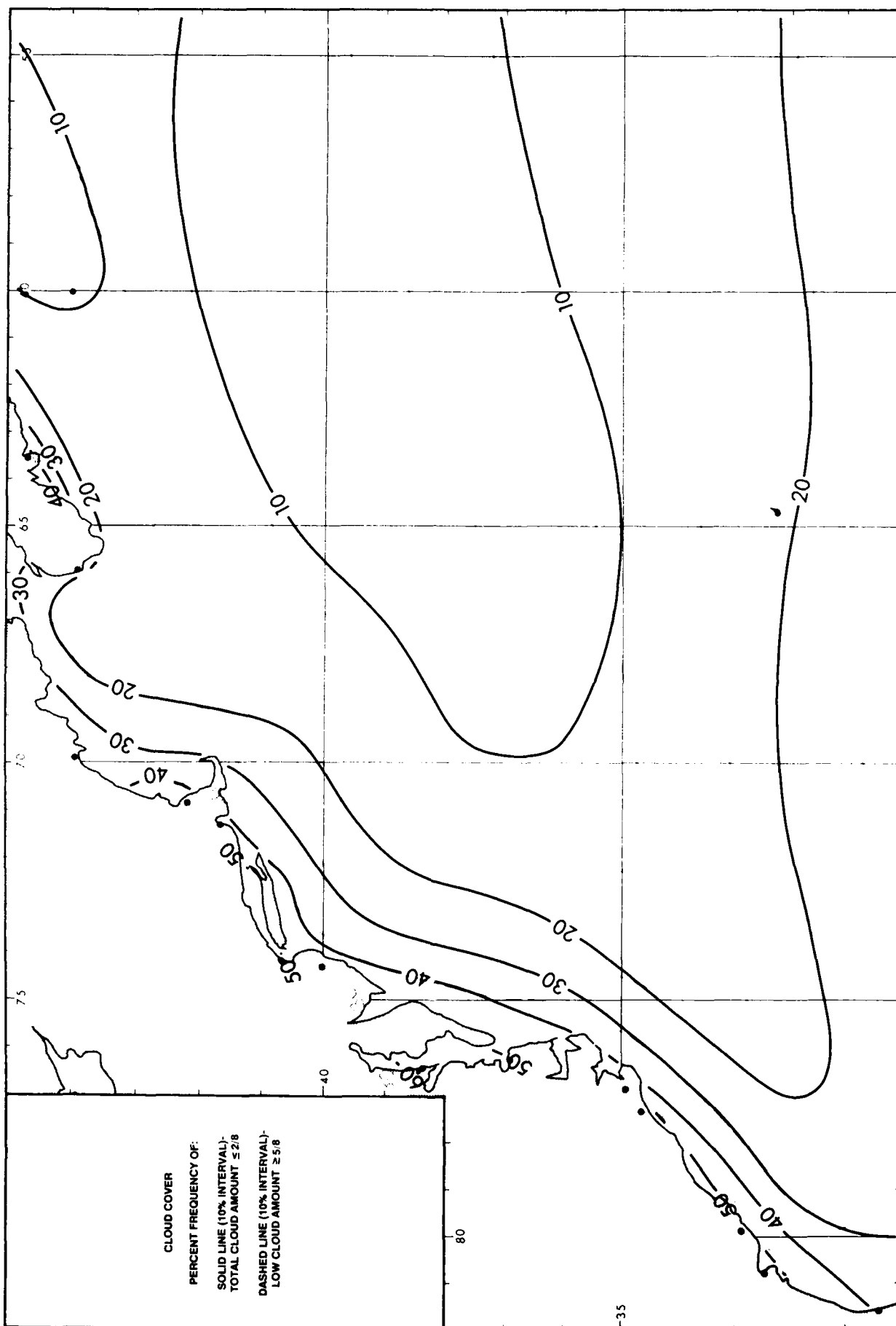






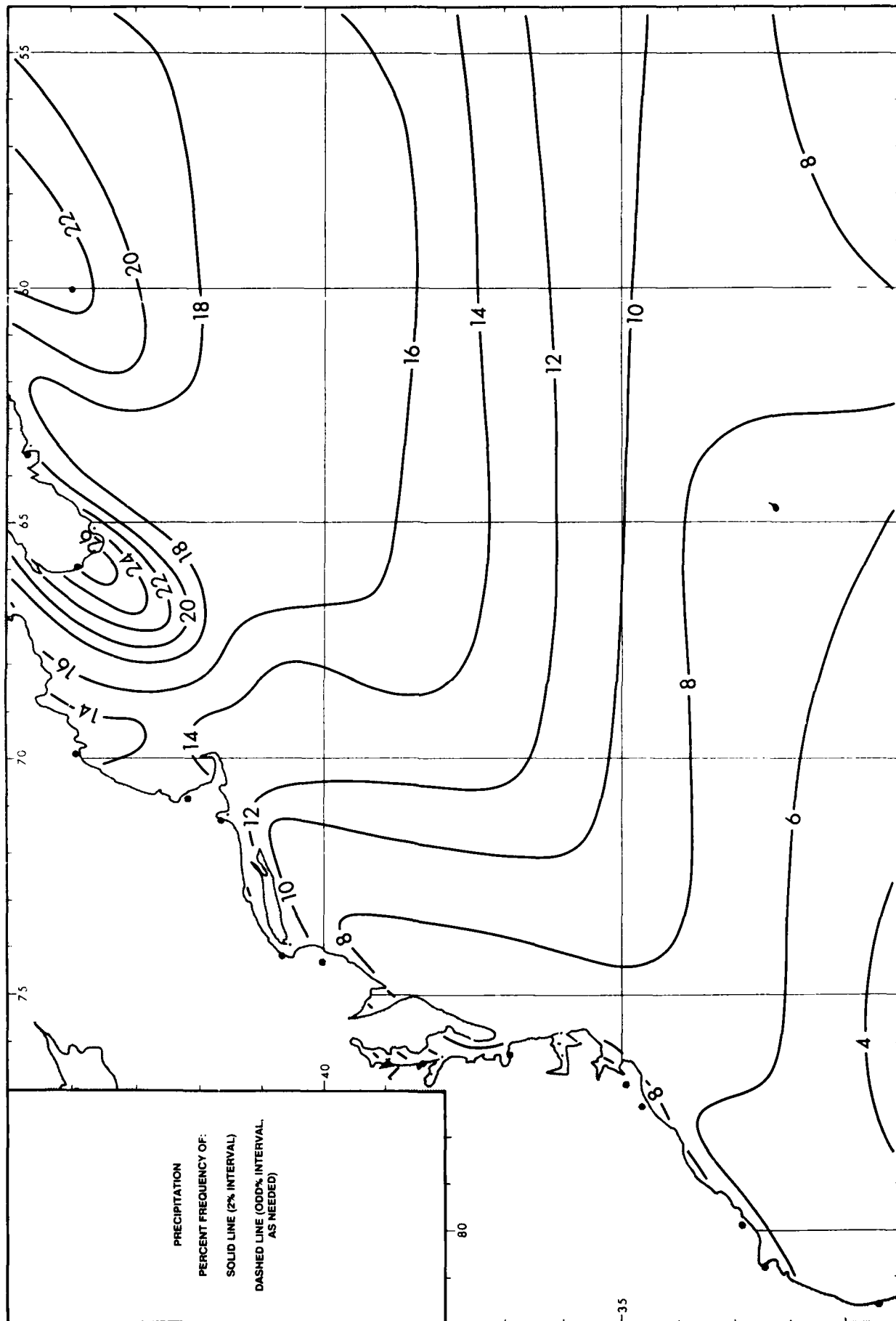
December

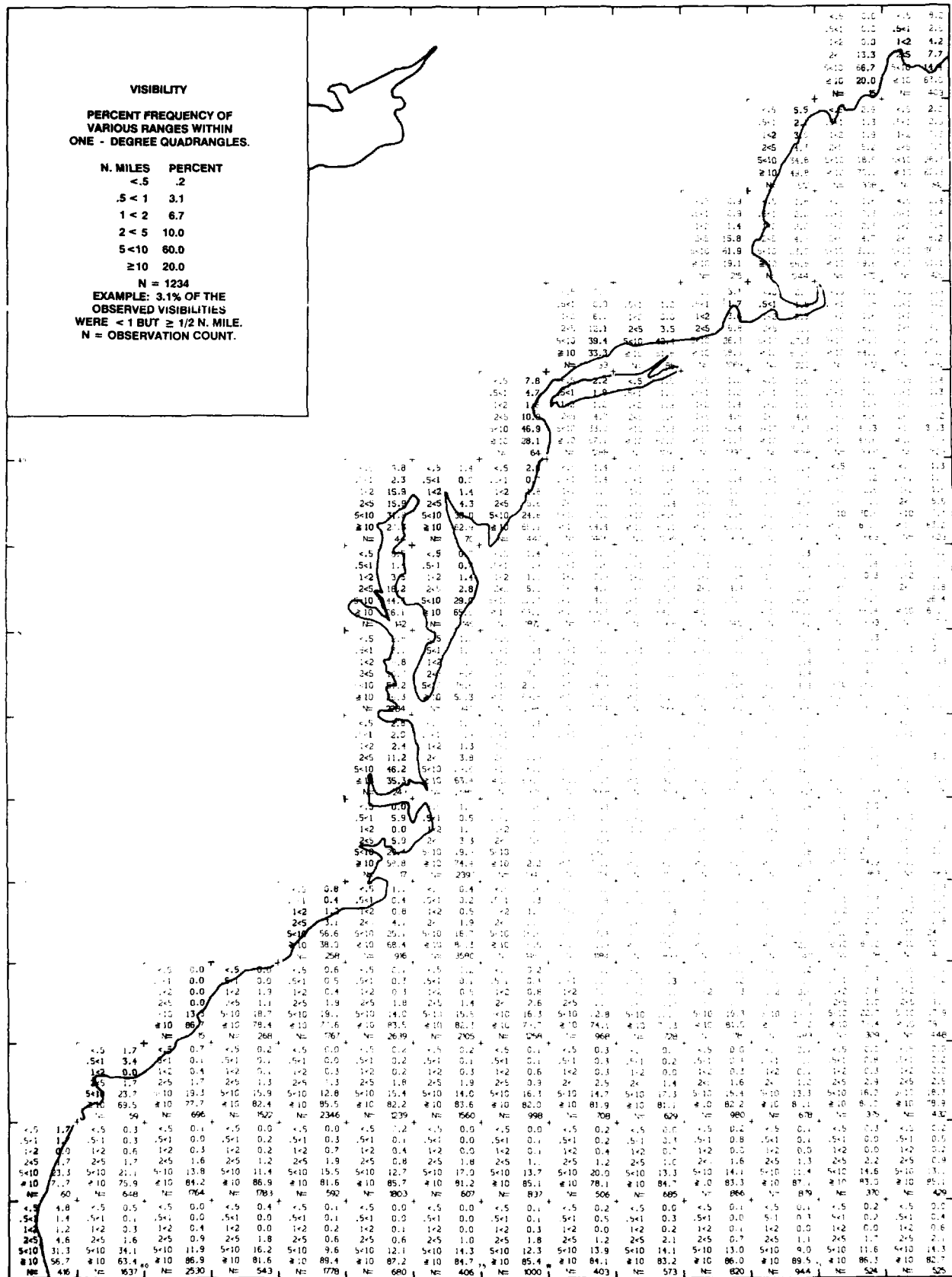
Clouds



December

Precipitation



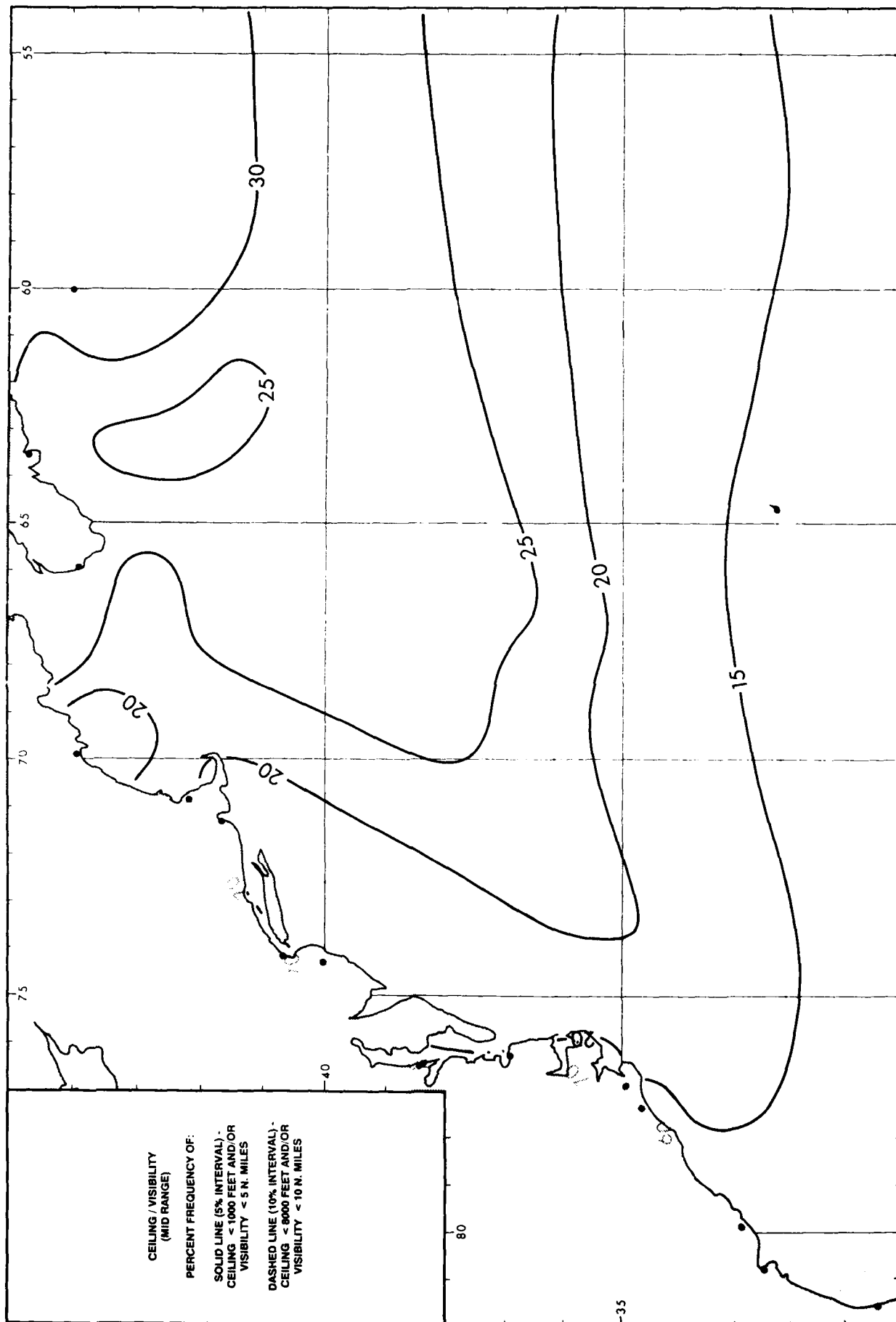


[illegible]

225

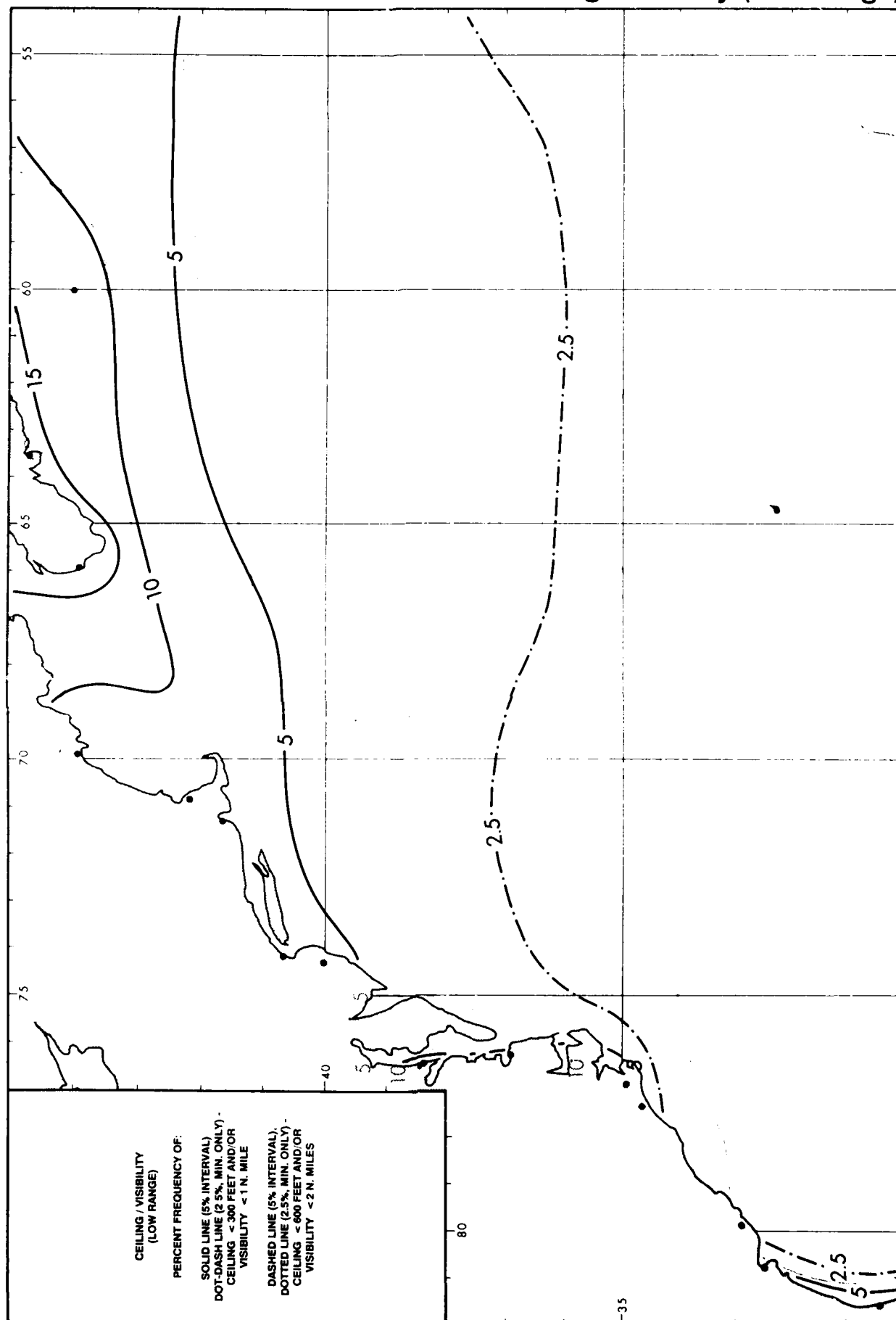
December

Ceiling / Visibility (Mid Range)



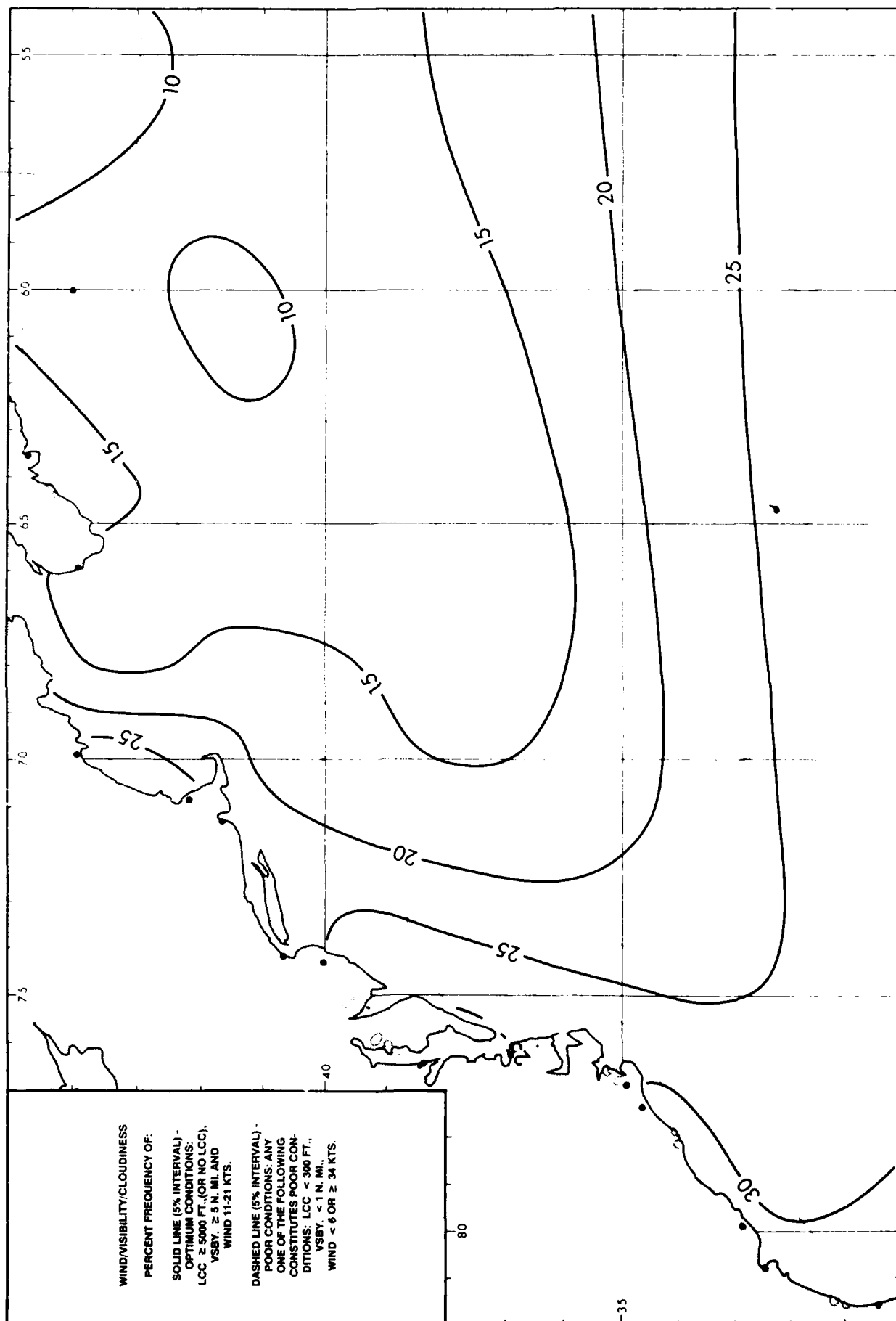
December

Ceiling / Visibility (Low Range)



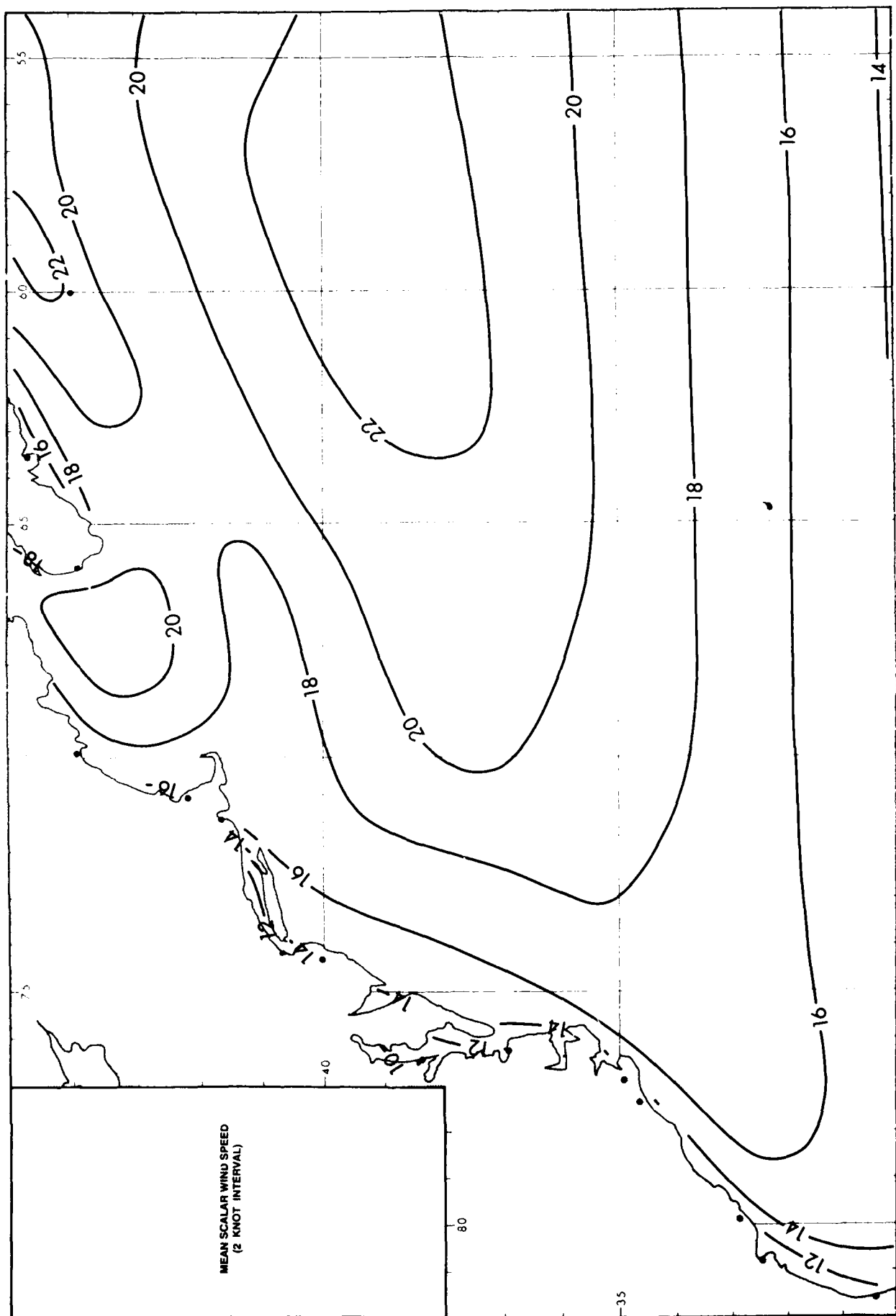
December

Wind / Visibility / Cloudiness



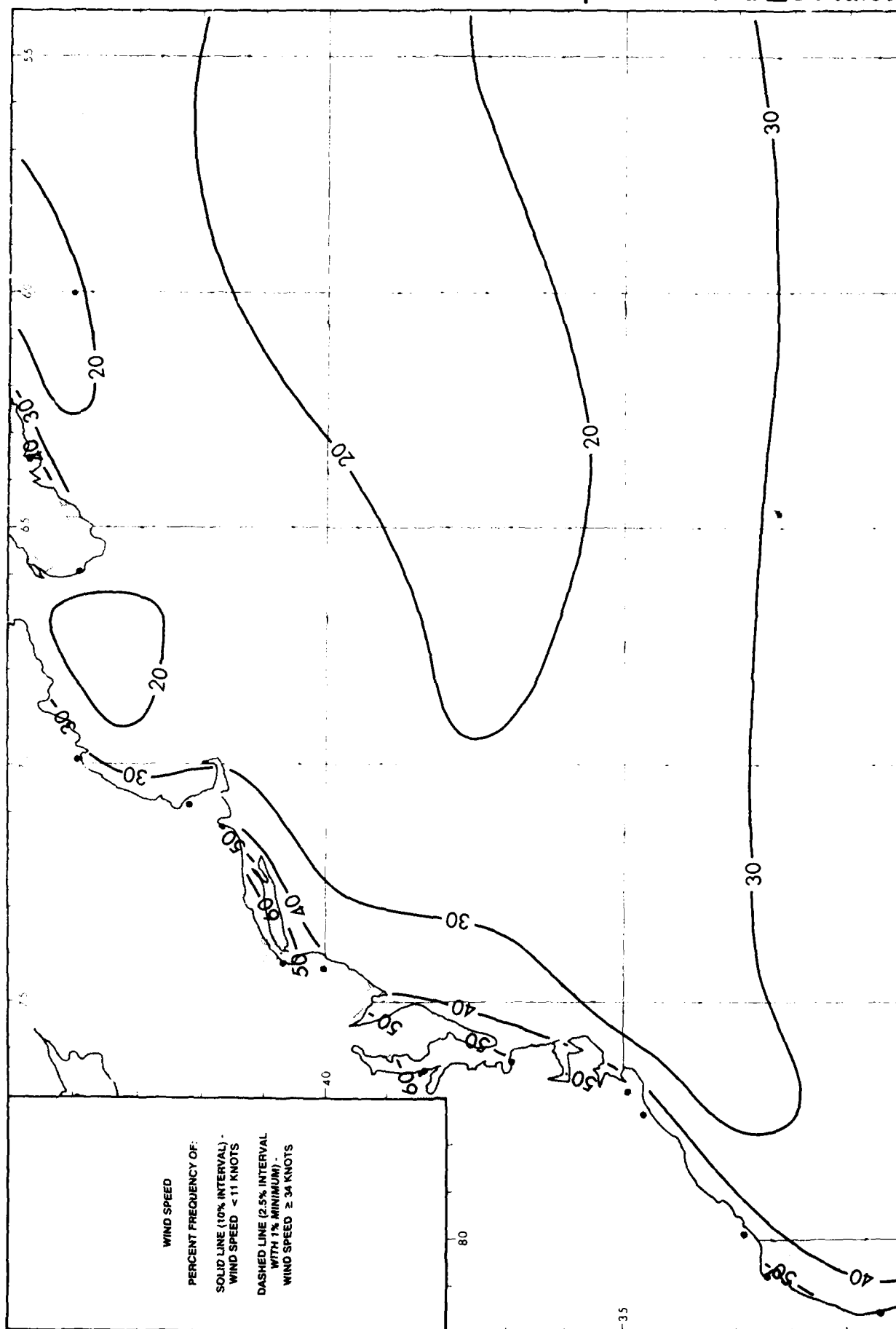
December

Mean Scalar Wind Speed



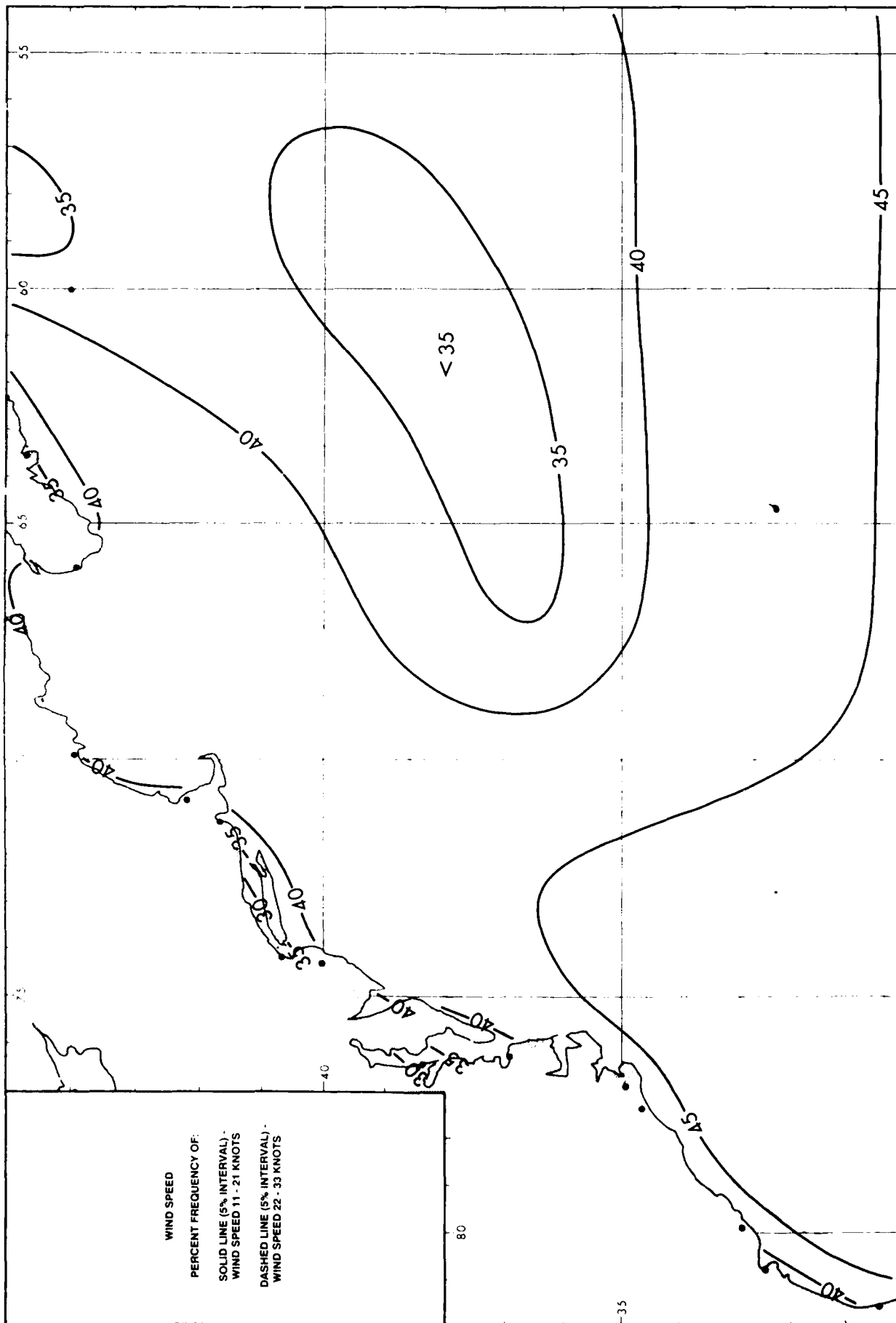
December

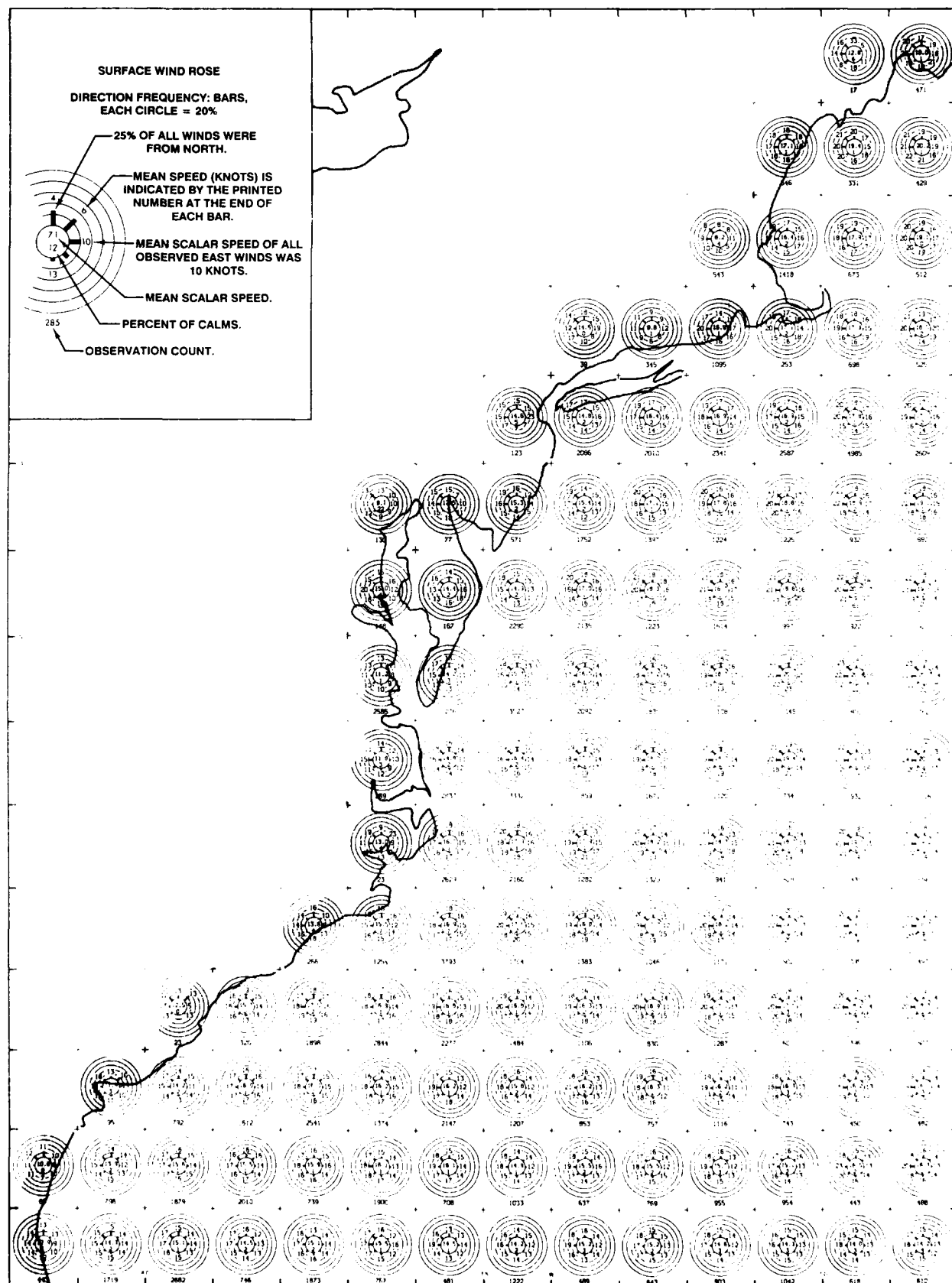
Wind Speed <11 and ≥ 34 Knots

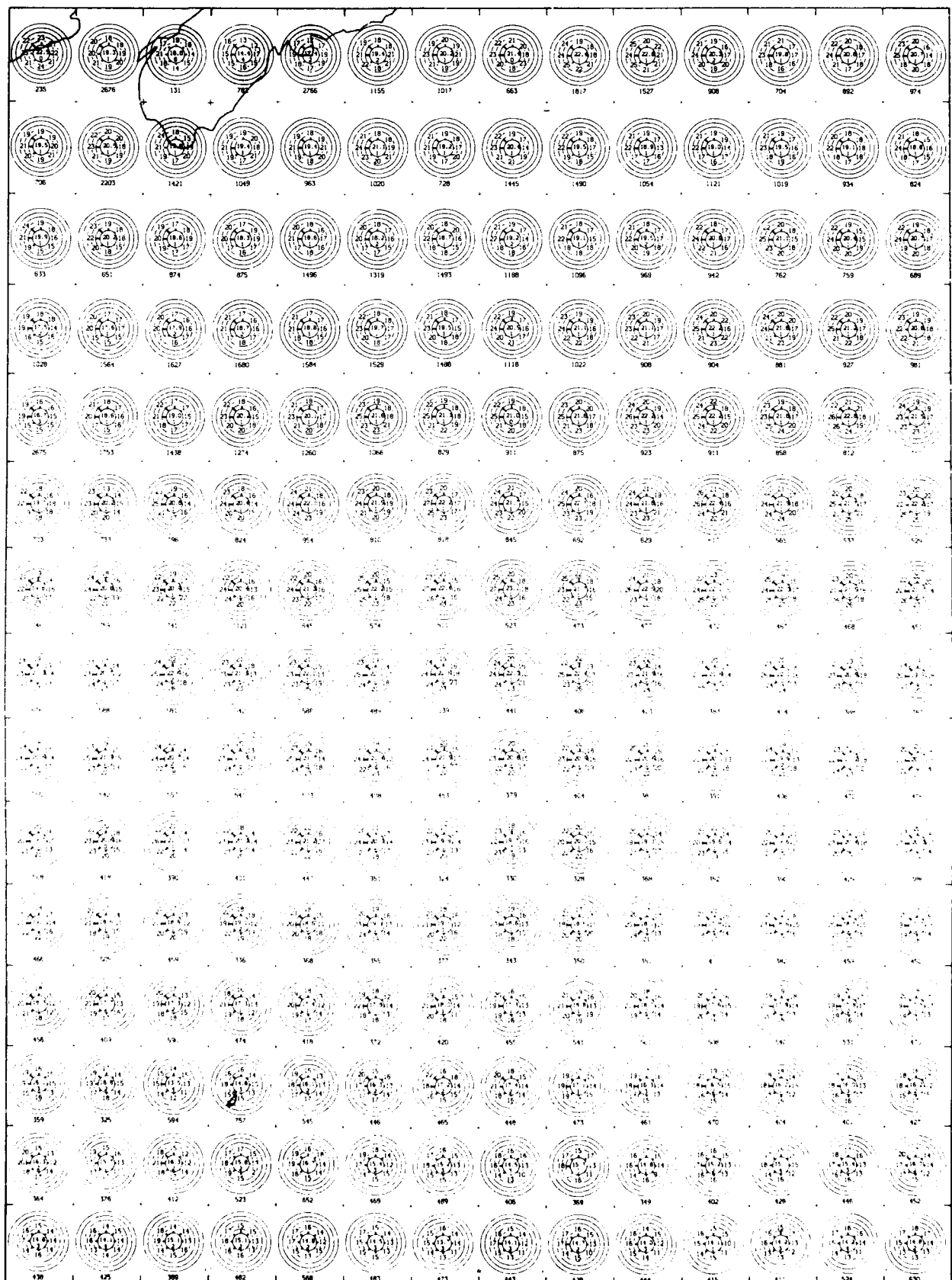


December

Wind Speed 11 - 21 and 22 - 33 Knots

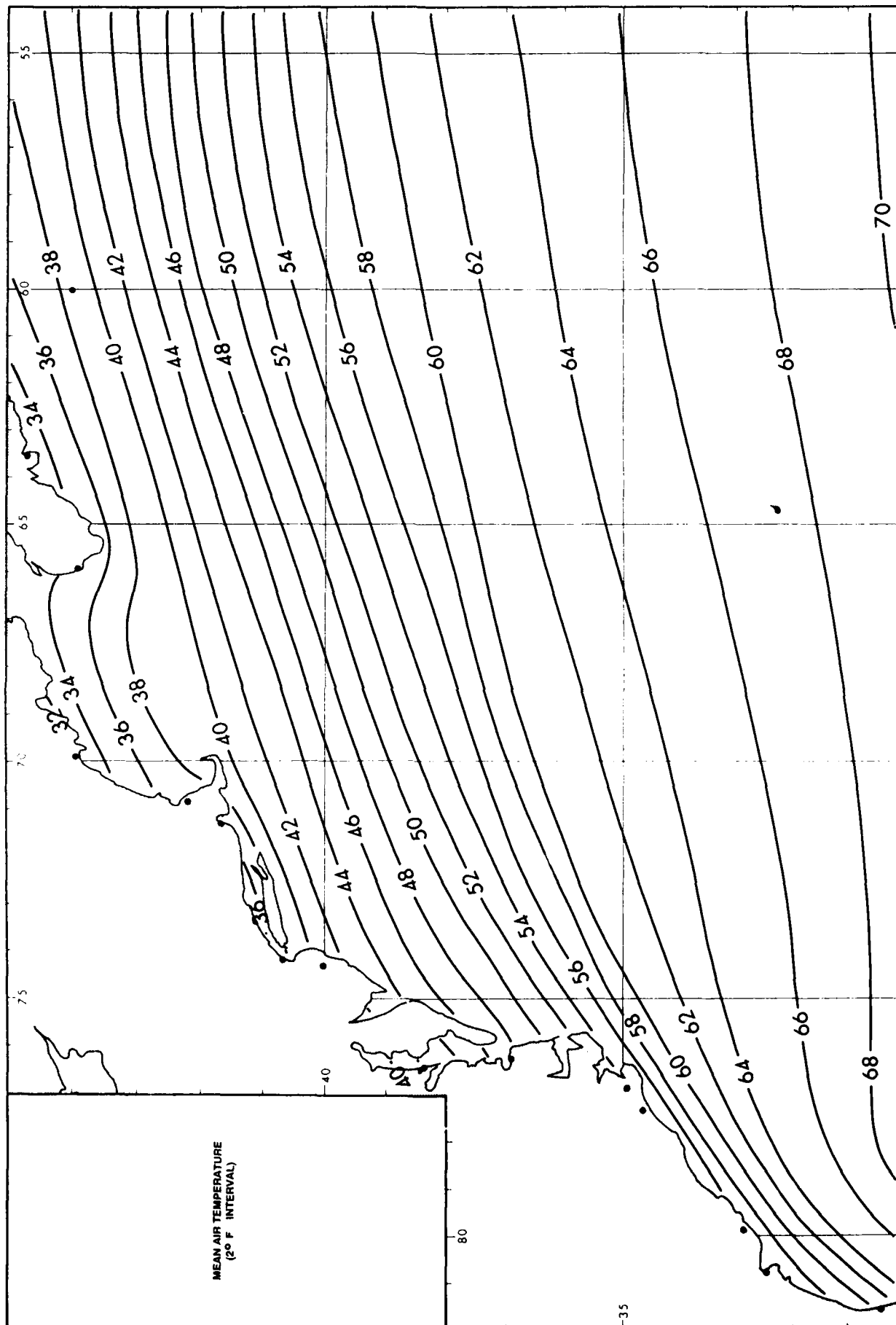






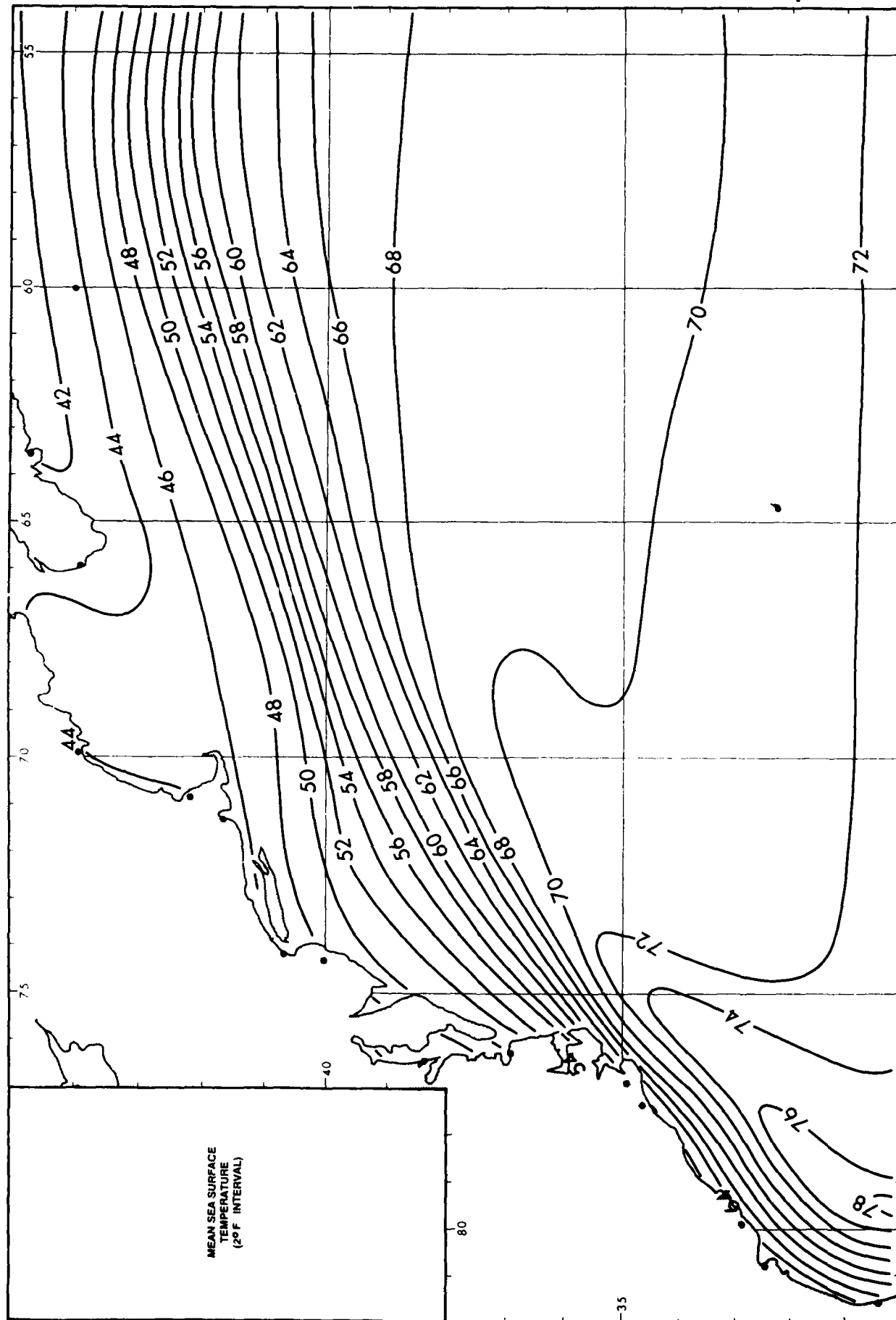
December

Mean Air Temperature



December

Mean Sea Surface Temperature



WAVE HEIGHT - FREQUENCIES
PERCENT FREQUENCY OF VARIOUS
RANGES WITHIN ONE - DEGREE
QUADRANGLES.

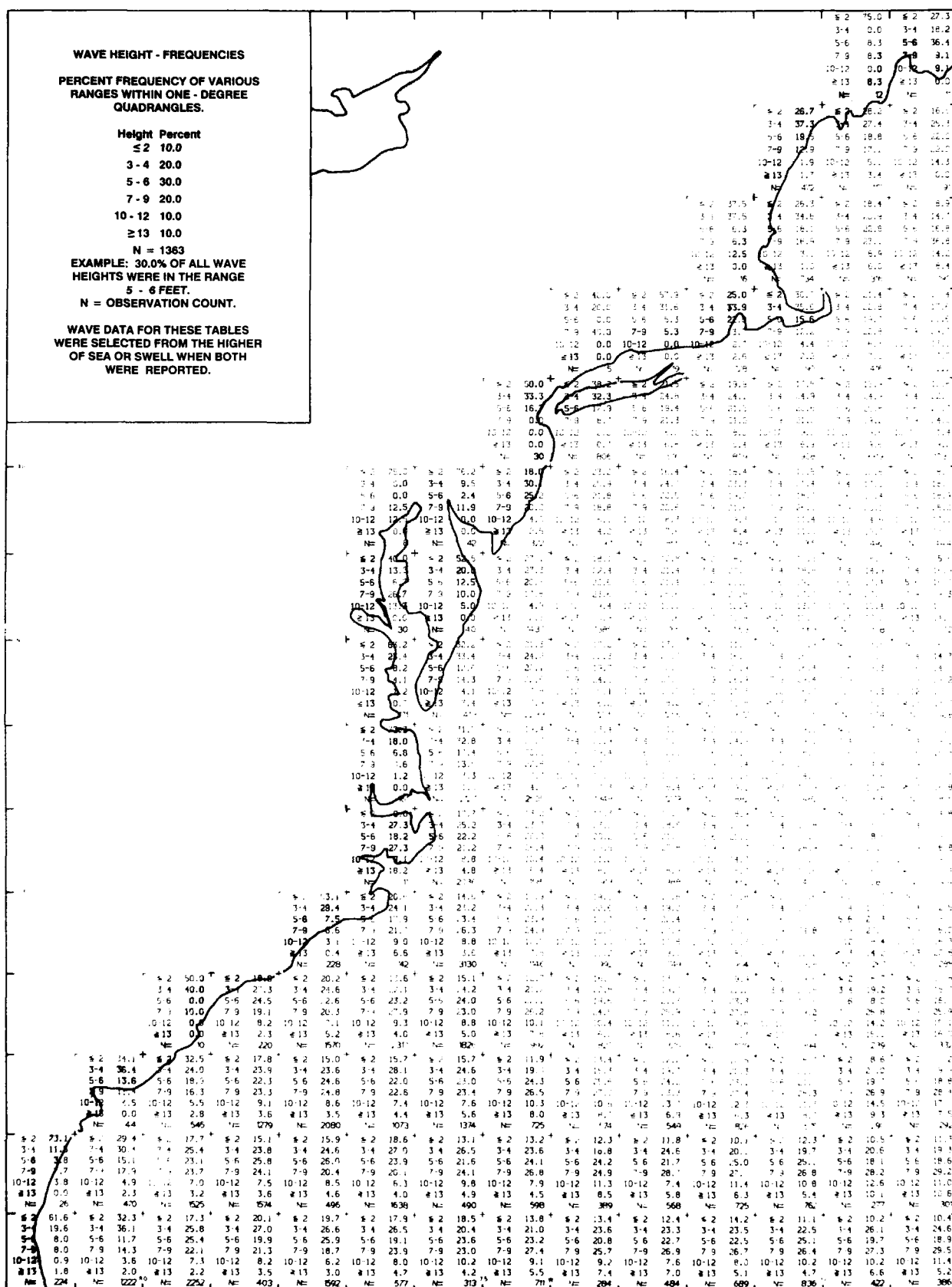
Height	Percent
≤ 2	10.0
3-4	20.0
5-6	30.0
7-9	20.0
10-12	10.0
≥ 13	10.0

N = 1363

EXAMPLE: 30.0% OF ALL WAVE
 HEIGHTS WERE IN THE RANGE
 5 - 6 FEET.

N = OBSERVATION COUNT.

WAVE DATA FOR THESE TABLES
 WERE SELECTED FROM THE HIGHER
 OF SEA OR SWELL WHEN BOTH
 WERE REPORTED.



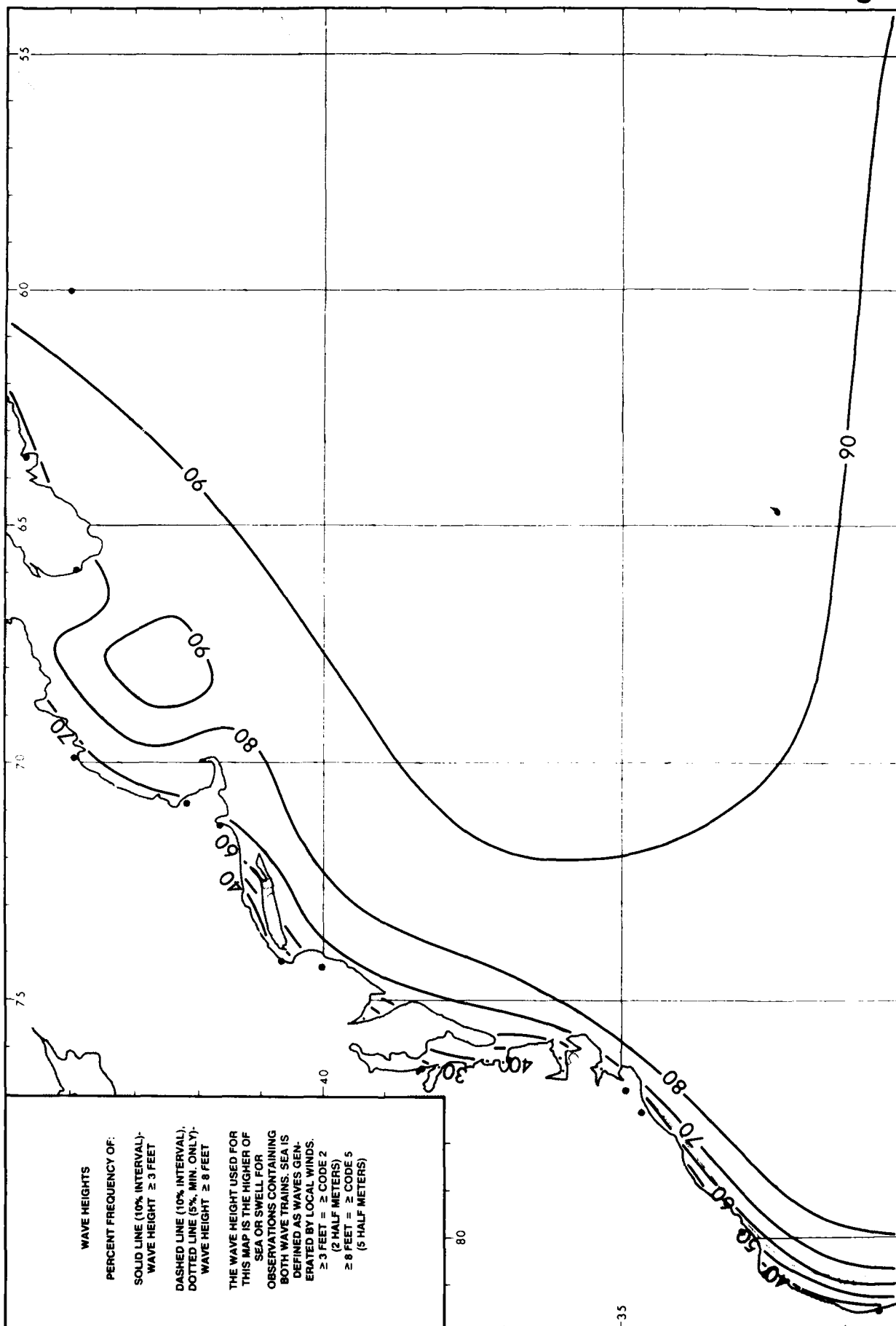
December

Wave Height

[illegible]

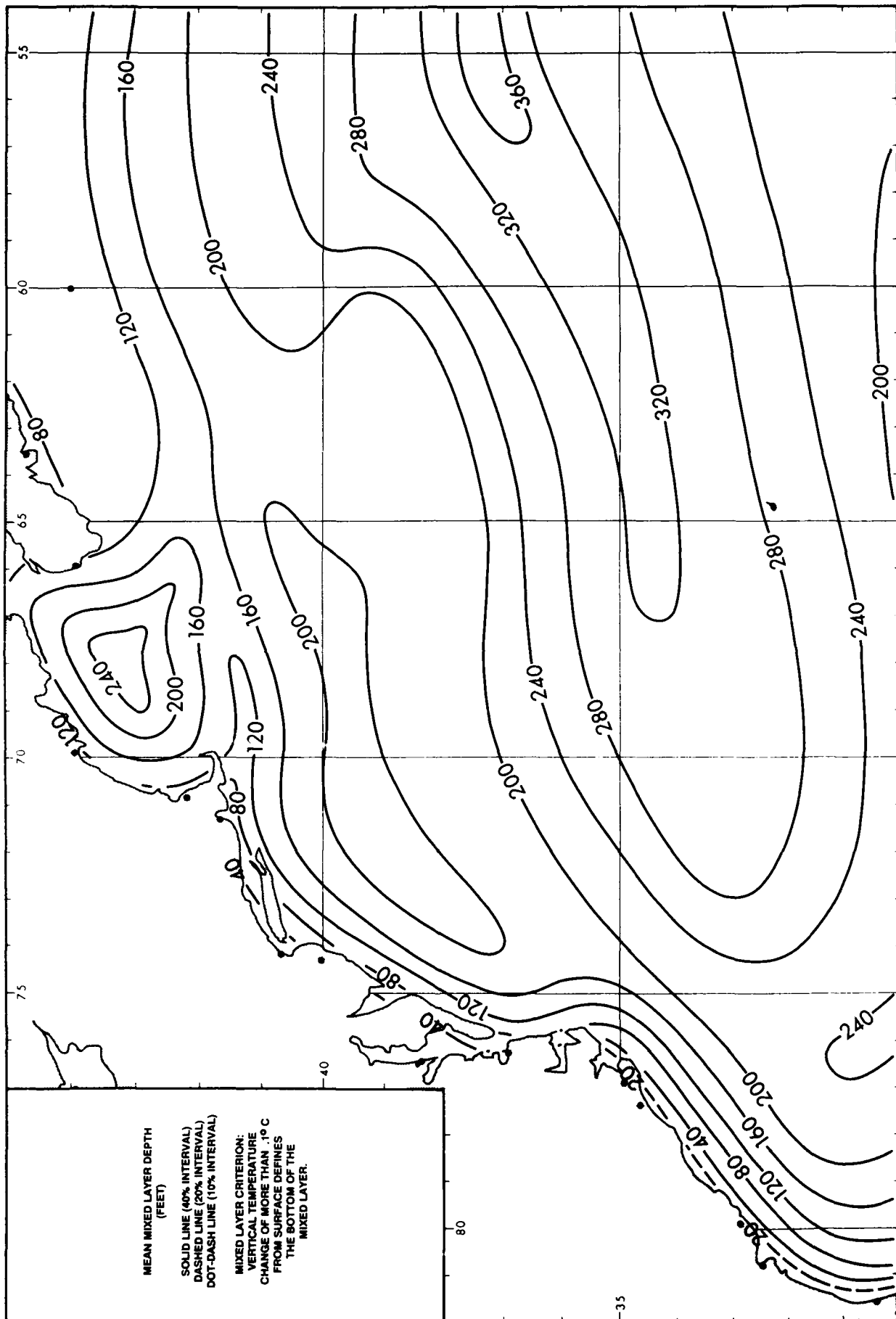
December

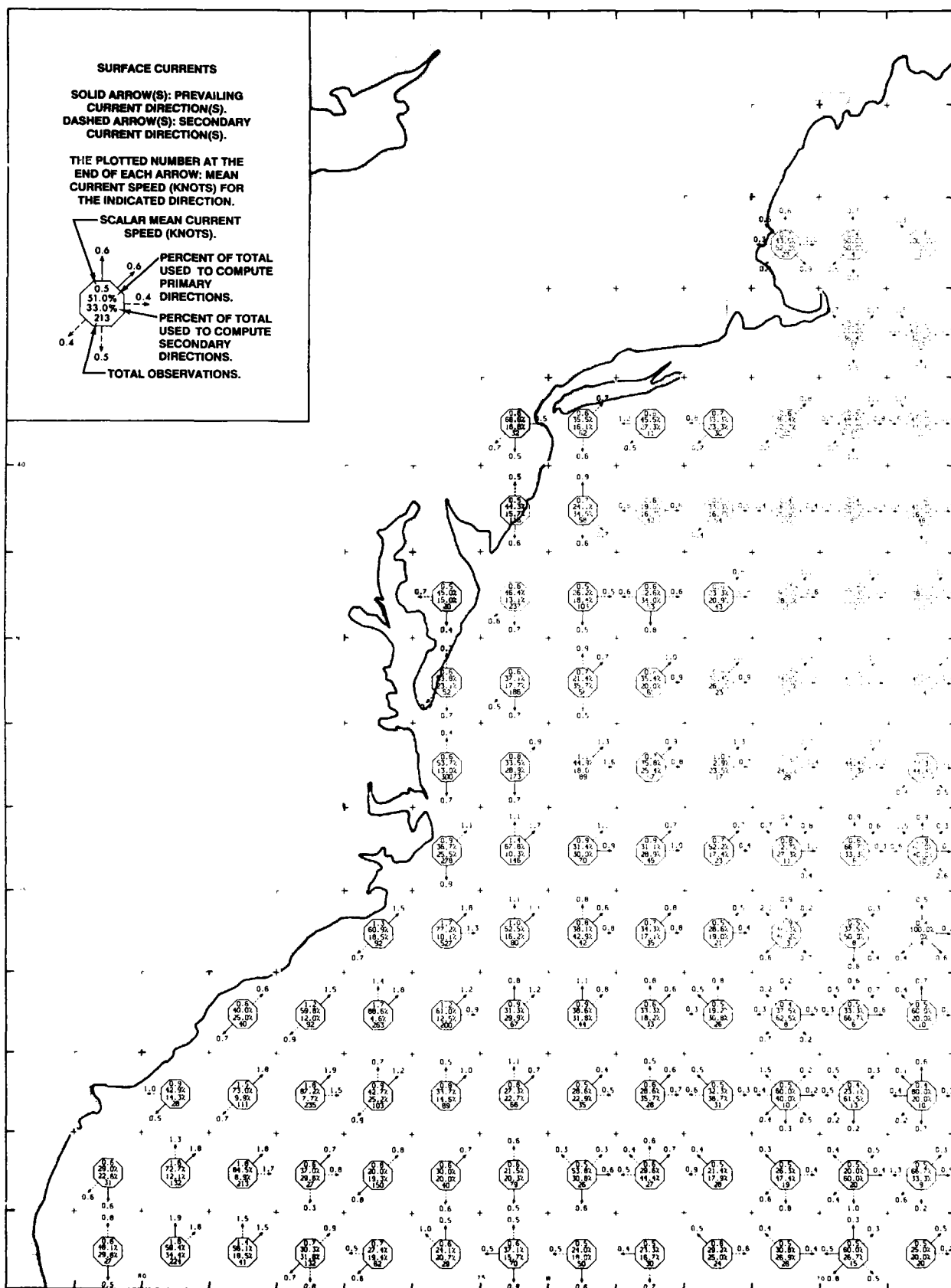
Wave Height



December

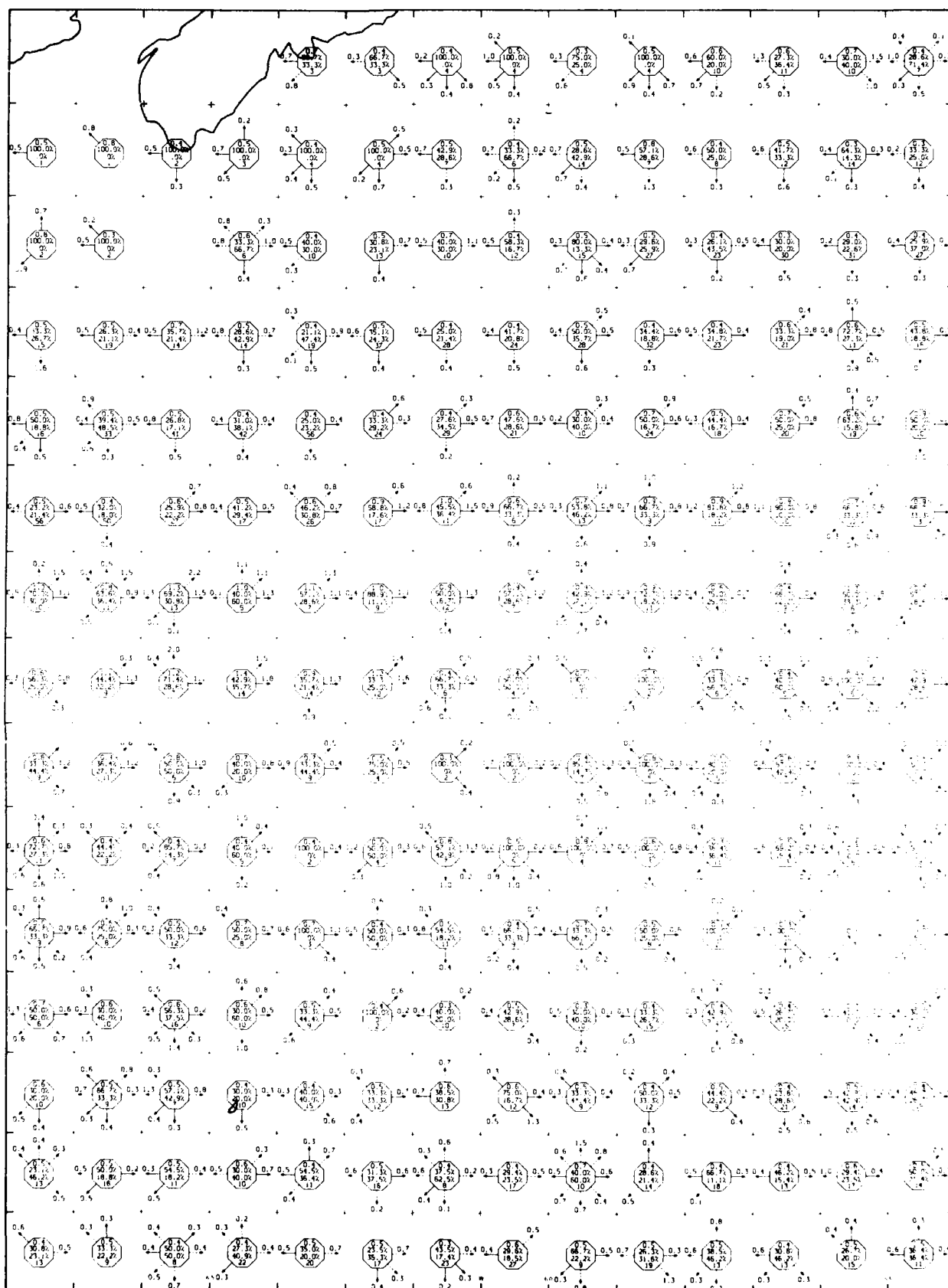
Mean Mixed Layer Depth





December

Surface Currents



```

# Create a new column 'Age' with values from 'Age' and 'Age2'
df['Age'] = df['Age'] + df['Age2']

# Drop the 'Age2' column
df.drop('Age2', axis=1, inplace=True)

# Print the first 5 rows of the DataFrame
df.head(5)

```

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THE UNIVERSITY OF CHICAGO

DEPARTMENT OF CHEMISTRY

RESEARCH REPORT

NO. 100

BY

ROBERT H. COOPER

AND

JOHN E. HARRIS

CHICAGO, ILLINOIS

1955

THE UNIVERSITY OF CHICAGO PRESS

CHICAGO, ILLINOIS

U.S. GOVERNMENT PRINTING OFFICE

WASHINGTON, D.C.

1955

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100-100

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry, no matter how small, should be carefully documented to ensure the integrity of the financial data. This includes recording dates, amounts, and the nature of the transactions.

The second part of the document outlines the procedures for reconciling the accounts. It states that the accounts should be reconciled at the end of each month to identify any discrepancies. This process involves comparing the internal records with the bank statements and ensuring that they match. If there are any differences, the reasons should be investigated and corrected.

The third part of the document describes the process of preparing the financial statements. It notes that the statements should be prepared on a regular basis, typically at the end of each quarter. These statements provide a summary of the financial performance of the organization and are used by management and external stakeholders to make informed decisions.

The fourth part of the document discusses the importance of internal controls. It states that a strong system of internal controls is essential for preventing fraud and ensuring the accuracy of the financial records. This includes implementing segregation of duties, requiring proper authorization for transactions, and conducting regular audits.

The fifth part of the document concludes by emphasizing the overall goal of financial management: to ensure the financial health and sustainability of the organization. It states that by following these guidelines, the organization can effectively manage its resources and achieve its long-term objectives.

Approved by the Board of Directors

The first part of the report deals with the general situation of the country and the progress of the work. It is followed by a detailed account of the work done during the year, and a summary of the results. The report is divided into two main parts, the first of which deals with the general situation of the country and the progress of the work, and the second of which deals with the detailed account of the work done during the year, and a summary of the results.

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The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry must be clearly documented, including the date, amount, and purpose of the transaction. This ensures transparency and allows for easy verification of the data.

The second part of the document provides a detailed breakdown of the financial data. It includes a table showing the monthly income and expenses over a period of six months. The table is organized into columns for each month, with rows for income, expenses, and a final row for the net result.

Month	Income	Expenses	Net Result
January	1200	800	400
February	1100	750	350
March	1300	900	400
April	1150	850	300
May	1250	950	300
June	1350	1000	350
Total	7350	5250	2100

The final part of the document concludes by stating that the data presented is accurate and reliable. It encourages the reader to use this information to make informed decisions regarding their financial future.

W. J. W. W. W.

THE
FEDERAL
BUREAU OF
INVESTIGATION
OF THE
DEPARTMENT OF JUSTICE
WASHINGTON, D. C.
20535

MEMORANDUM FOR THE DIRECTOR

SUBJECT: [Illegible]

[Illegible text follows]

Very truly yours,

[Illegible signature and text]

WILLIAM W. HALL

THE UNIVERSITY OF CHICAGO

DEPARTMENT OF CHEMISTRY

RESEARCH REPORT

NO. 1000

1955

BY

ROBERT H. EMMETT

AND

JOHN D. MATTHEWS

CHICAGO, ILLINOIS

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$$\mathbb{E}[\mathbf{y}_i | \mathbf{X}_i] = \mathbf{X}_i \mathbf{B} + \mathbf{U}_i \quad \mathbf{U}_i \sim \mathcal{N}(\mathbf{0}, \mathbf{C}_i) \quad \mathbf{U}_i \perp \mathbf{X}_i$$

